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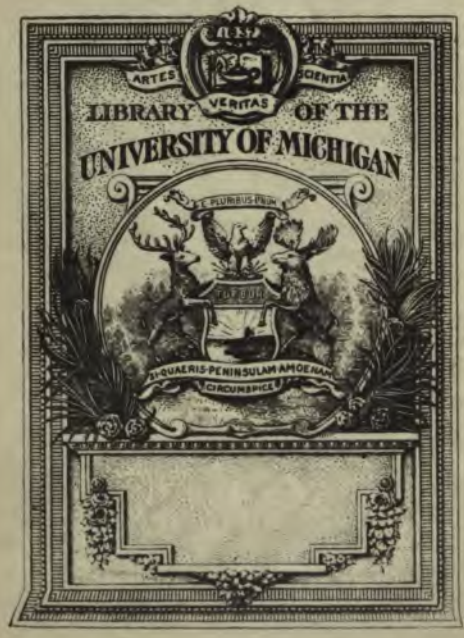
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HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES.

JULY—DECEMBER,

1860.

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THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED IN THE PRECEDING SIX MONTHS:

TOGETHER WITH A

SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

EDITED BY

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Dublin Quarterly Journal of the Medical Sciences.
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American Monthly Journal.
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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

&c. &c.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) HYGIENE.

ART. 1.—*On Fermented and Aërated Bread and their comparative dietetic value.* By Dr. J. DAUGLISH.

(*Medical Times and Gazette*, May 12, 1860.)

SINCE the new process of preparing bread has been introduced—a process which effects the raising of bread wholly by mechanical means, imparting to it the most perfect vesicular structure, while it leaves the constituents of the flour wholly unchanged and uncontaminated—there have not been wanting those who doubt whether the process of fermentation, by which bread has been hitherto prepared, is not really beneficial in other respects than that of imparting the vesicular structure to it; whether, in fact, the changes which the constituents of the flour—especially the starch—undergo, are not essential to healthy digestion in the stomach.

In order to dispose of the assertion that starch requires to be prepared by the fermentive changes, to render it fit for human food, it is but necessary to remark, that the proportion which the inhabitants of the earth, who thus prepare their starchy food, bear to those who do not, is quite insignificant. Indeed, it would appear that the practice of fermenting the flour or meal of the cereal grains is followed chiefly by those nations who use a mixed animal and vegetable diet, while those who are wholly fed on the products of the vegetable kingdom reject the process of fermentation entirely. Thus, the

millions of India and China, who feed chiefly on rice, take it for the most part simply boiled; and that large portion of the human race who feed on maize, prepare it in many ways, but they never ferment it. The same is true with the potato-eater of Ireland, and with the oatmeal-eater of Scotland. Nor do we find that even wheat is always subjected to fermentation; but the peculiar physical properties of this grain appear to have tasked man's ingenuity more than any other, to devise methods of preparing from it food which shall be both palatable and digestible. In the less civilised states, a favorite mode of dressing wheat grain has been, by first roasting and then grinding it. On the borders of the Mediterranean it is prepared in the form of maccaroni and vermicelli, while in the East it is made into hard thin cakes for the more delicate, and for the hardworking and robust into thicker and more dense masses of baked flour and water. Even in our own nurseries wheaten flour is baked before it is prepared with milk for infants' food. The necessity of subjecting wheaten grain to these manipulations arises from its richness in gluten, and from the peculiar properties of that gluten. If a few wheaten grains are taken whole, and thoroughly masticated, the starchy portions will be easily separated, mixed with the saliva and swallowed, whilst nearly the whole of the gluten will remain in the mouth, in the form of a tough tenacious pellet, on which scarcely any impression can be made. A similar state of things will follow the mastication of flour. In this condition, the gluten is extremely indigestible, since it cannot be penetrated by the digestive solvents, and they can only act upon its small external surface; hence the necessity to prepare food from wheat in such a manner as shall counteract this tendency to cohere and form tenacious masses. This is the object of baking the grain and the flour, as before mentioned, of making it into maccaroni, and of raising it into soft, spongy bread; by which latter means the gluten assumes a form somewhat analogous to the texture of the lungs, so that an enormous surface is secured for the action of the digestive juices; and this, Dr. Dauglish believes, is the sole object to be sought in the preparation of bread from wheaten flour.

Wheat is said to be the type of adult human food. It supplies, in just proportions, every element essential to the perfect nutrition of the human organism. And yet in practice we find that the food which we prepare from it, and furnish to the inhabitants of our large towns and cities, is quite incapable alone of sustaining the health and strength of any individual. This is the more remarkable, since in Scotland we find that the food prepared from the oat, a grain possessing the same elements of nutrition as wheat, though in a coarser form, furnishes almost the exclusive diet of a very large number of the hardiest and finest portion of the population.

In the large towns of France, wheaten bread certainly forms a very large proportion of the diet of the labouring classes, but not so large as oatmeal does in Scotland. And yet it has been remarked by contractors for public works on the Continent, that the chief reason why the Englishman is capable of accomplishing double the work of a Frenchman is, that the one consumes a very large proportion of meat, while the diet of the other is chiefly bread. In Scotland, how-

ever, the labouring man is capable of sustaining immense fatigue upon the nourishment afforded by oatmeal porridge.

The deficiency of wheaten bread in affording the nourishment due to the constituents of the grain, is, Dr. Dauglish thinks, to be attributed solely to the mode of preparing the flour, and the process followed for making that flour into porous bread.

The great object sought after both by the miller and the baker, is the production of a white and a light loaf. Experience has taught the miller that the flour which makes the whitest loaf is obtained from the centre of the grain; but that the flour which is the most economical, and contains the largest proportion of sound gluten, is that which is obtained from the external portions of the grain. But while he endeavours to secure both these portions for his flour, he takes the greatest care to avoid as much as possible, by fine dressing, &c., the mixture with them of any part of the true external coat, which forms the bran, knowing that it will cause a most serious deficiency in the colour of the bread after fermentation.

It is generally supposed that the dark colour of brown bread—that is, of bread made from whole wheaten meal—is attributable to the coloured particles of the husk or outer covering of the grain. But such is not really the case. The coloured particles of the bran are of themselves only capable of imparting a somewhat orange colour to bread, which is shown to be the fact when whole wheaten meal is made into bread by a process where no fermentation or any chemical changes whatever are allowed to take place. Some few years since a process was invented in America for removing the outer seed coat of the wheat grain without injuring the grain itself, by which it was proposed to save that highly nutritious portion which is torn away, adhering to the bran in the ordinary process of grinding, and lost to human consumption. The invention was brought under the notice of the French Emperor, who caused some experiments to be made in one of the government bakeries, to test its value. The experiments were perfectly satisfactory, so far as the making of an extra quantity of white flour was concerned, but when this flour was subjected to the ordinary process of fermentation and made into bread, much to the astonishment of the parties conducting the experiments, and of the inventor himself, the bread was brown instead of white. The consequence, of course, has been that the invention has never been brought into practical operation.

It has been estimated that as much as ten or twelve per cent. of nutritious matter is separated adhering to the bran, which is torn away in the process of grinding, and until very lately this matter has been considered by chemists to be gluten. It has, however, been shown by M. Mège Mouriès to be chiefly a vegetable ferment, or metamorphic nitrogenous body, which he has named Cerealin, and another body, vegetable Caseine.

Cerealin is soluble in water, and insoluble in alcohol. It may be obtained by washing bran, as procured from the miller, with cold water, in which it dissolves, and it may be precipitated from the aqueous solution by means of alcohol; but, like pepsine, when thus precipitated it loses its activity as a solvent or ferment.

In its native state, or in aqueous solution, it acts as the most energetic ferment on starch, dextrine, and glucose, producing the lactic and even the butyric changes, but not the alcoholic.

It acts remarkably on gluten, especially, when in presence of starch, dextrine, or glucose. The gluten is slightly decomposed at first, giving ammonia, a brown matter, and another production which causes the lactic acid change to take place in the starch and glucose. The lactic acid thus produced immediately combines its activity with that of the cerealin, and the gluten is rapidly reduced to solution.

The activity of the cerealin is destroyed at a temperature of 140° Fahr., according to M. Mouriès, but the author's experiments show that it is simply suspended even by the heat required to cook bread thoroughly; thus bread made without fermentation, of whole wheaten meal, or of flour in which there is a large proportion of cerealin, will, if kept at a temperature of about 75° to 85° Fahr., pass rapidly into a state of solution, if the smallest exciting cause be present, such as ptyaline or pepsin, or even that very small amount of organic matter which is found in impure water—while the same material, when it has been subjected to the alcoholic fermentation, will not be affected in a like manner.

The activity of cerealin is very easily destroyed by most acids, also by the presence of alum; and while it is the most active agent known in producing the earlier changes in the constituents of the flour, it cannot produce the alcoholic, but so soon as the alcoholic is superinduced the cerealin becomes neutralized and ceases to act any longer as a solvent. M. Mouriès, taking advantage of this effect of the alcoholic fermentation, has adopted a process by which he is enabled to separate from the bran all the cerealin and caseine which are attached to it. He subjects the bran to active alcoholic fermentation, which neutralizes the activity of the cerealin, and at the same time separates the nutritious matter; and then having strained this through a fine sieve, he adds it to the white flour in the preparation of white bread, by which an economy of ten per cent. is effected, and the colour of the bread is not injured.

The peculiar action of cerealin as a special digestive solvent of the constituents of the flour—gluten, and starch—has been practically tested by Mr. Stephen Darby, of Leadenhall Street, in a series of careful experiments, He found that when two grains of dry cerealin were added to 500 grains of white flour, and the whole digested in half an ounce of water, at a temperature of 90° for several hours, ten per cent, more of the gluten, and about five per cent. more of the starch, were dissolved than when the same quantity of flour was subjected to digestion without the addition of the cerealin, but in which of course, there was the small amount of cerealin that is present in all flours. The action of cerealin upon the gluten of wheat is precisely similar to that of pepsin on the fibrine of meat. Pepsine acting alone on fibrine dissolves it, but very slowly, but if lactic acid be added solution takes place very rapidly. In like manner the starch present with the gluten of wheat is acted upon by the cerealin, and produces the necessary lactic acid to assist in the solution of the gluten by cerealin.

With the knowledge thus obtained of the properties of this substance, cerealin, it is not difficult to understand why the administration of bran tea with the food of badly-nourished children, produces the remarkable results attributed to it by men both experienced and eminent in the medical profession; and why, also, bread made from whole wheaten meal, which contains all the cerealin of the grain, should prove so beneficial in some forms of mal-assimilation, notwithstanding the presence of the peculiarly indigestible and irritating substance forming the outer covering of the grain.

It will be seen that in all the methods of bread-making hitherto adopted, the peculiar solvent properties of this body, cerealin, has been sought to be neutralized simply because it destroys the white colour of the bread during the earlier stages of panary fermentation. It is by thus destroying the activity of the special digestive ferment which Nature has supplied for the due assimilation by the economy of the constituents of the wheaten grain, that wheaten bread is rendered incapable of affording that sustenance to the labouring man which the Scotchman obtains from his oatmeal porridge. Although the new bread has been as yet but little more than experimentally introduced to public consumption, the author, its inventor, has already received from members of the medical profession, who have recommended it in their practice, as well as from non-professional persons, accounts of the really astonishing results that have followed its use in cases of deranged digestion and assimilation. Private gentlemen have sought interviews with him to record the history of their recovery to health, after years of suffering and misery, by the simple use of the bread as a diet. Children that have been liable to convulsive attacks from an irritable condition of the alimentary canal and nervous system, have been perfectly free from them immediately the new bread was substituted for fermented bread. And cases are now numerous that have been communicated by medical men of position, in which certain distressing forms of dyspepsia, which had remained intractable under every kind of treatment, have yielded as if by magic almost immediately after adopting the use of the aërated bread.

The delicate flavour of the new bread renders it peculiarly grateful to the stomachs of invalids and children, as well as of those whose tastes have not become vitiated by the habitual use of baker's bread, which is slightly sour, and tastes of yeast. The new bread was supplied to two wards in Guy's Hospital, in place of the ordinary bread (which is of a very fine quality, made on the premises), for two months, and in no case were there any pieces left in the wards unconsumed, while of the fermented bread large quantities of scraps are collected daily, for the consumption of which the appetites of the patients have been deficient.

That persons who have been long used to the yeasty-flavoured bakers' bread, should consider the new bread tasteless at first is not to be wondered at, since the delicate sense of taste is of all other senses the most easily lost by rough usage. Hence the argument put forth in defence of adulteration by some London tradesmen, especially the beer sellers, that the public will not buy the pure article, as it is wanting in the flavour to which they have been accustomed; and

hence, also, the dislike of the Viennese of the fresh oysters supplied to them when the railway was completed, as they deemed them insipid, after the habitual use of oysters slightly decomposed, with which they had been supplied when it required a lengthened period to transport them from the sea. Dr. Dauglish is disposed to attribute the beneficial effects of the new bread to two causes. The one to the *absence* of the prejudicial matters imparted to ordinary bread by the process of fermentation, and the other to the *presence* in the bread, unchanged, of that most essential agent of digestion and assimilation, cerealin. He believes the prejudicial matter imparted to bread by fermentation to be chiefly two—acetic acid and the yeast-plant. The first is produced in large quantities, especially in hot weather, by the oxydation, by atmospheric contact, of the alcohol produced. The second is added when the baker forms his sponge, and is also rapidly propagated during the alcoholic fermentation, and cannot of course be afterwards separated from the other materials in the manner that the yeast and the other *débris* of fermentation separate themselves from wine and beer by precipitation in the process of fining, Nor is the life of the yeast-plant generally destroyed in baking, because it requires to be retained at the boiling point for some time before it is thoroughly destroyed; and bread is generally withdrawn from the oven, for economical reasons, even before the centre of the loaf has reached the temperature of 212°. It is not difficult to understand how the most painful and distressing symptoms and derangements may follow the use of bread in which the yeast-plant is not thoroughly destroyed previous to ingestion, in those cases of impaired function in which the peculiar antiseptic influence of the stomachal secretions is deficient, and is incapable of preventing the development of the yeast-plant in the stomach, and the setting up of the alcoholic fermentation to derange the whole process of digestion and assimilation.

The presence of cerealin in bread is as beneficial as that of acetic acid and the yeast-plant is prejudicial. Digestion, or the reduction of food, is evidently essentially dependent on the action of a class of substances which chemists, for want of a better term, have called ferments—to these substances belong pepsine, ptyaline, emulsion, diastase, and cerealin; these are evidently types of a very numerous class, which act by producing those molecular changes in organic substances in which digestion consists; and since the purpose of digestion or solution is to prepare from heterogeneous substances taken as food a chyle, which shall not only when absorbed present all the elements of healthy blood, but shall, previous to absorption, possess the properties which will constitute it the proper stimulus to the functional activity of the lacteals, it would appear to be necessary that each distinct substance taken as food should be furnished, not with its simple chemical solvent, but with that peculiar form of solvent or ferment which alone can carry it through those molecular changes which shall terminate in the production of healthy chyle. Hence we should infer that a substance is digestible or indigestible, just in proportion to the provision that is made for its reduction to the standard of healthy chyle, and that substances which have hitherto been inca-

pable of affording any nutrition whatever, may at some future day be rendered highly nutritious, simply by adding to them suitable ferments, artificially obtained or otherwise, that shall secure their passing through the proper molecular changes. Indeed, this subject opens up to us that very wide field of inquiry, as to whether the cause and prevention of disease, and the beneficial administration of remedies may not, for the most part, if not entirely, be dependent on the action of substances analogous to such bodies as ptyaline, pepsine, cerealin, &c., acting in concord with, or retarding and opposing the vital functions of tissues; and that by more profound inquiry in this field of research, the physiologist and the pathologist may not at a future day lay the foundation of true scientific medicine.

Art. 2.—*On Phosphated Bread.*

By Professor Horsford, of Philadelphia.

(*Scientific Amer. and Chem. News*; and *Dublin Medical Press*, Oct. 3, 1860.)

The essential qualities of a substitute for cream of tartar, in the preparation of all forms of light bread, cakes and pastry, are that the article should be at least as unobjectionable as cream of tartar in its relations to the animal economy; that it should be pulverulent; and that when mixed with bicarbonate of soda and flour, it should, on the addition of moisture or application of heat, yield a neutral salt, and set free carbonic acid. If, in addition to these qualities, an article could be devised which should possess, in the form in which it is used, unquestionable excellence as an element of food, its value would be placed beyond doubt. The author tried in a great variety of ways, as numerous others have tried, without success, to find some form of muriatic acid which could be mixed with bicarbonate of soda, so as, after raising the dough or paste, common salt should be found in the product. He then sought some form of harmless organic acid, suited to all the conditions of the problem, but this effort and many others were alike fruitless. At length it occurred to him to take an acid constituent present in all the cereals and healthful food, and place this in the necessary conditions to fulfil the wants of the problem, and, at the same time, in such form that when taken into the system it would be suited to the agencies there in action, to be absorbed, if needed, or readily and healthfully removed if not required. Of all such constituents none is so important as phosphoric acid. Physiological and chemical research have shown that wherever in the body there is an organ of important functions, there Nature has provided a store of phosphates. They are present in the juices, the tissues, the muscles, and in large measure in all the brain and nervous matter, and in larger measure still, in the bones. The grains we consume contain them. The flesh we eat contains them. The bones we boil and dissolve contain them. All these considerations led the author to the conviction that if it were possible to prepare phosphoric acid, in some form of acid phosphate of lime, so that, after its action with moist carbonate of soda, it would leave phosphate of soda (a constituent of the blood) and phosphate of lime (an essential constituent of food), and confer upon it the ne-

cessary qualities of a dry, pulverulent acid, the end would be so far attained as to justify a practical experiment in domestic use. Dr. Horsford continues:—

"I succeeded in producing the article in condition to meet the wants of the problem. I then introduced it into my family for use in all forms, as a substitute for cream of tartar for culinary purposes. When many months of daily use had assured me that my theoretical views were sustained by practical application, I gave it into the hands of friends, whose prolonged experience fully confirmed my own. It has been in constant use in my family now for more than four years: and in the form of yeast powder, during this time, it has been produced and consumed in all parts of the country to a very large extent, settling, in the most satisfactory manner, all questions as to its serviceability and healthfulness. Dr. Samuel Jackson, Professor of the Institute of Medicine in the University of Pennsylvania, gives the following testimonial in support of these views:

"'Your substitute for cream of tartar for the raising of bread is a decided improvement. The tartaric acid is not a constituent of the grains from which flour is made; it is not a nutritive principle, and often disagrees with the alimentary organs. The phosphate of lime, which is the principal ingredient of your preparation, is an essential constituent of all grains. It is further an important nutritive principle; and recent experiments have proved it is an indispensable element in the construction, not of bones only, but of all the animal tissues. A deficiency of the phosphate of lime in food is a common cause of ill health, of defective development and retarded growth in children. In the conversion of wheat into flour, the phosphate of lime is rejected with the bran; and, in consequence, this necessary element of nutrition, contrary to the arrangement of Nature, is not obtained from our fine wheat bread. Your preparation, while it makes a light, sweet, and palatable bread, restores to it the phosphate of lime which has been separated from the flour, and thus adapts it as an aliment for the maintenance of a healthy state of the organization.'"

ART. 3.—*Means of determining the quality of Milk.*

By Dr. H. MINCHIN.

(*Dublin Medical Press*, Aug. 8, 1860.)

The practical difficulty which has attended the employment of the several methods of milk-testing hitherto in use, is to be attributed in some measure to the fact that upon any scale that can be devised, upon any principle whatever, there is not one point to which we can refer as a standard of purity. The nearest approach we can make to the establishment of such a standard is to ascertain, by experimenting on several specimens of average quality and known purity, whether we can seize upon some physical property which admits of sufficiently accurate measurement for the purpose; then, it has been ascertained that an inferior quality is indicated when the specific gravity is below a certain range—but this can be raised artificially by the abstraction of some of the cream; an inferior quality is also

indicated when the per-centage of cream is less than a certain number; but the instrument employed for exhibiting this per-centage is found to be fallacious, inasmuch as it only shows how much cream has floated to the surface in a given time, and experiment has proved that the richer the milk the less is the cream disposed to float. Many persons are able to judge pretty accurately as to the quality of milk, by carefully observing the transparency which the fluid exhibits when poured in a thin film from one vessel to another; and it would appear that this property, which has already suggested the instrument of M. Donné, might be again turned to account in the construction of a more simple instrument, which would indicate definitely, and enable us to register numerically, the degree of transparency possessed by a given sample; and we should be thus in possession of a very efficient means of estimating the degree to which the milk had been diluted, or how far it fell short of the average quality.

Such an instrument has lately been invented; the principle of its construction is extremely simple, and the experiments instituted with a view of testing its performance, several series of which have been repeated, appear to have been attended with the most satisfactory and encouraging results. The instrument is made of brass, in the form of a shallow, oblong vessel, capable of containing about an ounce of fluid; the depth of the vessel is made to increase gradually, by means of a slab of white enamel fixed in a gentle slope from one end to the other; this slab is graduated throughout its entire length. Upon this the milk is poured till the vessel is filled, and a cover of plate glass is then put on—this should be done by giving it a sliding motion to exclude air bubbles. When the vessel full of milk is thus covered, the degree of dilution possessed by the sample under examination is estimated by the number of degrees on the enamel, which can be read through the glass cover; for, the glass being in contact with the edge of the enamel plate at one end, and separated from it by a gradually increasing interval towards the other, the intervening stratum of milk is made to assume the form of a thin wedge. If the fluid under examination be of a rich quality, abounding in oily and caseous particles, it will possess such an amount of opacity that only a few degrees can be discovered on the subjacent enamel when the instrument is held opposite to the light; if, on the contrary, the specimen be of inferior quality, whether from innate poverty, or the admixture of water, the diminution of opacity thence resulting will be evinced by the enamel scale becoming visible through a deeper part of the fluid, or at a greater distance from the commencement of the scale; the degree of translucency, therefore, can be measured by the number of lines visible through the fluid.

ART. 4.—*Metropolitan Waters in* 1860. By Dr. R. D. THOMPSON.

(*Pharmaceutical Journal*, June, 1860.)

The following table, showing the comparative purity, or rather impurity, of Metropolitan waters, is from Dr. Thompson's last report on this subject. The composition of a well containing sewage, which was

a prime cause in an outbreak of cholera, is appended for the sake of comparison. The table speaks for itself.

	Total Impurity per gallon.	Organic Impurity per gallon.
	Grs. or °	Grs or °
Distilled water	0·0	0·0
Loch Katrine water, new supply to Glasgow	3·32	0·96
Well at Sandgate	40·96	5·20
THAMES COMPANIES :—Chelsea	19·84	1·44
Southwark	19·76	1·52
Lambeth	19·20	1·68
Grand Junction	20·00	1·60
West Middlesex	19·04	1·36
OTHER COMPANIES :...New River	20·93	1·92
East London	22·55	2·00
Kent	22·80	2·24

ART. 5.—*On the Turkish, or Hot-air Bath.* By Dr. R. WOLLASTON, Physician to the South Staffordshire Hospital.

(*British Med. Jour.*, Oct. 27, 1860.)

The Turkish Bath is essentially a *hot-air bath*, though the admixture of a small amount of humidity renders it more easy and agreeable to bear. Its intention is to produce copious perspiration, while its remedial action is aided by the art of shampooing. It was introduced into England by Mr. Urquhart, formerly secretary to the Turkish embassy, but at first it attracted little attention. Now more than a hundred baths have been erected in various parts of England, and they are beginning to be regarded as important remedial agents.

Construction.—There are four chambers generally considered necessary in its construction. The first chamber, or *frigidarium*, is a room for undressing, and cooling after the bath; it is of the ordinary temperature of the atmosphere. The second is the *warm* room, or *tepidarium*, elevated to a temperature of 120° Fahrenheit. The third is the *hot* chamber, or *sudatorium*, elevated to 160° or 170°. The fourth, or *lavatorium*, is for the ablutions. The patient enters the first or cool room, the *frigidarium;* here he undresses, and puts on a thin cotton gown, and loose pair of drawers, which tie round the loins, and reach to the knees. His head may be encircled with a towel, made tolerably wet with cold water and wrung out, and then fastened round the head. As the floor of the next room is too hot for his feet, wooden pattens, with a strap over the instep, so as to embrace the foot firmly, are put on, he then enters the second room, or *tepidarium;* the temperature of this room should be from 120° to 130°. The room should be furnished with small windows, which can easily be opened, if necessary to cool it; it should have the means of ventilation, either by a valvular opening at the top or in the sides of the walls; the walls

should be made solid with cement or fire-brick. The heat is supplied by means of a strong *furnace* heating an oven which communicates with fire-brick flues, or iron pipes, circulating under the floor and through the sides of the walls. The floors should be made of slabs of fire-brick or tiles, over which a framework of wood, with square openings, somewhat resembling a harrow, should be placed, covering the whole room. This room should be about twelve feet square, provided with solid oak benches around, or strong reclining chairs with cane bottoms. The patient may walk about or sit down; in a quarter of an hour he will begin to perspire; he may now drink freely of cold water—it is better that he should drink one or two tumblers or more. When the attendant feels the surface of the body, and ascertains that it is sufficiently perspirable, he conducts the patient through the door which separates it from the third or hot chamber (*sudatorium*), which is considerably hotter than the preceding. The hot room should be 160° or 170°, and of the same size and shape as the warm room; it should be similarly constructed as to windows and ventilation. It is desirable to have a tube three or four inches in diameter passing through each opposite wall, capable of being shut or open, so as to let fresh air in if the patient finds the heat too much, and the respiration affected. Two or three large pans of water may be placed in the corners of the room, as a moderate amount of moisture is more pleasant to breathe than air absolutely dry; but there should be no visible vapour. The patient may now remove the loose gown, and fresh damp the head bandage if he find the heat at all oppressive to his head. The patient walks about till the perspiration freely bursts out; he can walk about, or sit on the benches, which should be covered with a thin horse-hair squab. After a quarter of an hour or more, dependent upon constitutional temperament, he may lie down on the *shampooing* table, made of thick solid oak, covered with a thin horse-hair squab, his head resting on a horse-hair pillow, or sit down on a chair, if he prefer it. The shampooer now rubs him down, at first gently and afterwards with more force, pressing his hands in the direction of the main blood-vessels of the limbs, so as to assist the circulation towards the heart. He will then compress the abdomen and back, and use friction in such a way as to be brisk without being rough, and in proportion as he finds the patient can bear it. He will continue the kneading, compressing, and friction, for twenty minutes or half an hour, or even longer if the patient likes it. The patient, after being duly shampooed, may return through the second room to the fourth room (*lavatorium*) or ablution chamber which adjoins it, where he is well washed with soap from head to foot, bowls of warm water are thrown over him, and the soap and the secretions of the skin are all washed away. After this he may, or may not, have recourse to a gentle shower-bath, or a dash from a small jet of cold water. The washing room should be supplied with hot and cold water, with cane-bottomed chairs, and should be eight or ten feet in length and breadth, and of the ordinary temperature of the atmosphere. This room should adjoin either the first or second room, as may be most convenient in the construction of the building. The effect of the cold water shower or dash is generally pleasant and refreshing; it

may be omitted if the patient dislikes it, but usually it is a much better and safer plan to play freely on the body, especially the spine, with the cold water. The body having been heated to a high degree, the exalted power of the nervous system enables it to resist the shock of cold. It is the reactive effect of cold which is so eminently beneficial; it nips up the pores of the skin, prevents undue relaxation, and checks excess of perspiration. The patient is now wiped dry, and puts on a gown moderately warmed, and walks back to his dressing room. By the time he reaches it, perspiration will break out more or less; he will then again rub himself dry, and lie down on a couch, or walk about, till he gradually cools; this takes ten minutes; he then dresses himself, and leaves his chamber. He retires to the buffet, where he takes a glass of sherbet or a cup of coffee, and pipe or cigar, and finds himself delightfully refreshed. Mr. Urquhart's description of his state is: "The body has come forth shining like alabaster, fragrant as the cistus, sleek as satin, soft as velvet; the touch of the skin is electric."

Diseases to which the bath may be applied.—Of all the numerous complaints to which the hot-air bath is eminently serviceable may be mentioned those which are of long standing, called *chronic*. There are no maladies which assume such protean types as those of the skin; their number is legion. Some have estimated them as consisting of five or six hundred varieties. The majority of these affections will yield to the sanative effect of the hot-air bath alone, though many, no doubt, require the aid of sulphur, mercury, arsenic, iodine, sarsaparilla, antimony, &c., as invaluable internal remedies. Cachectic diseases, such as scrofula and secondary syphilis, consumption in its early stage, malarious fevers, remittent and intermittent, biliary derangements, gouty and rheumatic diatheses, dyspeptic and renal disease, especially Bright's, and diabetes, neuralgia, hysteria, and many nervous and spasmodic complaints, as epilepsy, &c.; hypochondriasis, paralytic affections, lameness, contracted joints, fatty degenerations particularly, dropsies; uterine diseases, as amenorrhœa, dysmenorrhœa, and leucorrhœa, cholera, diarrhœa, and dysentery, influenza, catarrh, bronchitis, diphtheria, and numerous others, which make up a long catalogue of maladies which are benefited or cured by the use of the Turkish bath. It must be left to the discrimination of the physician to select the diseases, or the varying conditions of the disease, when the patient is subjected to the bath. It must not be expected that the bath has miraculous properties. It will fail, of course, to answer the expectations of the unreasonable and over sanguine, and must be repeated, probably, many times to ensure its efficacy. It is contra-indicated in several forms of disease, especially those of an hæmorrhagic or sanguineous tendency, and cardiac disease generally, as well as those that show too much determination of blood to the head. But a very little reflection is sufficient to guard an intelligent practitioner from an incautious or indiscriminate use of a remedy so powerful as the hot-air bath.

ART. 6.—*On the Training of Pugilists.* By Dr. ——.

(*Lancet*, May 9, 1860.)

"By what means," asks the Editor of the Lancet, *à propos* of the fight between Sayers and Heenan, "can a man be brought into such a wonderful state of muscular development, of lung-force, and of power of endurance, as was exhibited in the recent conflict? What is the method pursued in order to bring out this marvel of physical vigour? The answer may have its uses beyond the rearing of pugilists. The professors of the art accord, we believe, an enlightened respect to the precepts of medicine. We are, however, unable to describe their practice from personal experience. It is understood that the plan pursued is varied, according to the condition and requirements of the individual in training. But the general system is somewhat as follows. Diet and exercise are most scrupulously regulated. The athlete who has, by indulgence or inaction, become too fat and short-winded, is thickly clad in woollen garments, and made to run long distances, frequently up-hill, until he perspires freely. He is then carefully rubbed with coarse towels. He also takes frequent baths, so that the skin is thoroughly cleansed, and made to perform its emunctory and other functions with the greatest perfection. He is submitted to a variety of exercises, such as sparring, the use of dumb-bells, and other means calculated to increase muscular development, and expand the chest. His principal food consists of beef-steaks and mutton-chops. The steaks are well beaten to render the muscular fibre more digestible; dressed in a frying-pan, diligently polished to exclude the chance of dirt or other contamination; and cut into very thin morsels to facilitate mastication, and that minute subdivision which is conducive to perfect digestion. He is not restricted from beer, but is compelled to be moderate. Under a few weeks' subjection to this system, the puffy fellow, who could not run twenty yards without panting, nor receive a moderate blow without exhibiting bruises and extravasation, is disencumbered of all superfluous tissue, and brought into a condition capable of the greatest physical exertion and endurance. The regenerated athlete comes into the ring, exulting in muscular power and activity. Suppleness and force are revealed in every movement. You have before you the ideal of the human animal personified. Nor is the result entirely one of animal excellence. The physical qualities of man can hardly be wrought to a high pitch without also evoking some of the moral good that is in him. The training itself implies mental as well as physical discipline. For a long time the pugilist—having his aim in view, possibly a bad aim—has exercised the most resolute self-denial. When he encounters his antagonist, that self-denial gives place to perfect self-control. We fear we must not divert the word chivalry from its ordinary acceptation to conflicts of this kind; but there is surely something akin to it in that unswerving and not ungenerous observance of the rules of 'fair play,' and that admirable command of temper under the most severe punishment, which are amongst the characteristics of the professional pugilist. Now, when we remember that men

and boys will quarrel and fight, it is impossible not to recognise the utility of some standard that shall serve to control and moderate the brutal passions of combatants. This we undoubtedly see. The laws of the ring exert their sway over the whole population, and unquestionably often prevent acts of cowardice and cruelty."

ART. 7.—*Habits of Intoxication as causing a type of Disease.* By Mr. ——.

(*The Journal of Psychol. Medicine*, April, 1860.)

The writer refers to the influence of alcoholism as a cause of insanity, as exhibited in the statistics of hospitals for the insane. Thus, of three hundred and fifty cases admitted into Charenton, in 1857 and 1858, one hundred and two were caused principally, if not solely, by the use of alcoholic drinks. After detailing the views of various authors on the nature, symptoms, and results of chronic alcoholism, and its deleterious agency in perverting the intellectual and moral faculties, the following curious and interesting, though scarcely infallible, deductions are made in regard to the influence of beer and spirits upon the mortality of the intemperate in Great Britain. The average duration of life, after the commencement of intemperate habits, is, according to one authority:*

Among beer drinkers		21·7 years.
„ spirit drinkers		16·7 „
„ those who drink spirits and beer indiscriminately		16·1 „

Consequently the rate of mortality will be—

Among beer drinkers		4·59 per cent. yearly.
„ spirit drinkers		5·99 „ „
„ mixed drinkers		6·19 „ „

In regard to the influence of *profession* upon alcoholism, several interesting conclusions respecting the duration of life after the commencement of intemperate habits are given. The average period, according to the same authority, is—

Among mechanics, working, and labouring men	.	18 years.
„ traders, dealers, and merchants	. . .	17 „
„ professional men and gentlemen	. . .	15 „
„ females		14 „

After discussing the treatment of chronic alcoholism, and especially the employment of the oxide of zinc as a valuable tonic, by Dr. Marcet in the Westminster Hospital, the writer suggests that, "until the mental and physical phenomena of poisoning by alcohol receive an extension in the systematic teaching of medicine, and a position in our nosological arrangement in some degree pertinent to the amount of physical and moral mischief attributed to the potent liquid in ordinary life, we, the medical profession, shall probably not succeed in avoiding a habit of using phrases in reference to intoxication which to

* Neison on the 'Rate of Mortality among Persons of Intemperate Habits.'

ourselves signify one thing, to the by-standers another; we shall not, therefore, succeed in convincing the public that intoxication or drunkenness the *mania*, and intoxication or drunkenness the *bad habit*, are two entirely different things—the one readily distinguishable, with care, from the other, and the one requiring the police magistrate, the other the doctor."

Art. 8.—*The Use and Abuse of Tobacco.*

By Sir Benjamin C. Brodie, Bart., F.R.S., D.C.L., &c.

(*The Times*, Aug. 28, 1860.)

Few medical men will, we think, be disinclined to endorse the opinion so well expressed by Sir Benjamin Brodie in the following letter to the editor of the Times:

"Sir,—Having been applied to some time since to join in a petition to the House of Commons that they would appoint a committee to inquire into the effects produced by the prevailing habit of tobacco-smoking, I declined to do so; first, because it did not appear to me that such a committee would be very competent to discuss a question of this kind; and, secondly, because, even if they were so, I did not see that it would be possible for Parliament to follow up by any act of legislation the conclusions at which they might have arrived. Nevertheless, I am ready to admit that the subject is of no trifling importance, and well worthy the serious consideration of any one who takes an interest in the present and future well being of society. From these considerations it is that I now venture to address to you the following observations.

"The empyreumatic oil of tobacco is produced by distillation of that herb at a temperature above that of boiling water. One or two drops of this oil (according to the size of the animal) placed on the tongue will kill a cat in the course of a few minutes. A certain quantity of the oil must be always circulating in the blood of an habitual smoker, and we cannot suppose that the effects of it on the system can be merely negative. Still, I am not prepared to subscribe to the opinion of those who hold that, under all circumstances, and to however moderate an extent it be practised, the smoking of tobacco is prejudicial. The first effect of it is to soothe and tranquillise the nervous system. It allays the pains of hunger, and relieves the uneasy feelings produced by mental and bodily exhaustion. To the soldier who has passed the night in the trenches before a beleaguered town, with only a distant prospect of breakfast when the morning has arrived; to the sailor, contending with the elements in a storm; to the labourer, after a hard day's work; to the traveller in an uncultivated region, with an insufficient supply of food, the use of a cigar or a tobacco-pipe may be not only a grateful indulgence, but really beneficial. But the occasional use of it under such circumstances is a very different matter from the habit of constant smoking which prevails in certain classes of society at the present day.

"The effects of this habit are, indeed, various, the difference depending on difference of constitution, and difference in the mode of

life otherwise. But, from the best observations which I have been able to make on the subject, I am led to believe that there are very few who do not suffer harm from it, to a greater or less extent. The earliest symptoms are manifested in the derangement of the nervous system. A large proportion of habitual smokers are rendered lazy and listless, indisposed to bodily, and incapable of much mental exertion. Others suffer from depression of the spirits, amounting to hypochondriasis, which smoking relieves for a time, though it aggravates the evil afterwards. Occasionally there is a general nervous excitability, which though very much less in degree, partakes of the nature of the *delirium tremens* of drunkards. I have known many individuals to suffer from severe nervous pains, sometimes in one, sometimes in another part of the body. Almost the worst case of neuralgia that ever came under my observation was that of a gentleman who consulted the late Dr. Bright and myself. The pains were universal, and never absent; but during the night they were especially intense, so as almost wholly to prevent sleep. Neither the patient himself nor his medical attendant had any doubts that the disease was to be attributed to his former habit of smoking, on the discontinuance of which he slowly and gradually recovered. An eminent surgeon, who has a great experience in ophthalmic diseases, believes that, in some instances, he has been able to trace blindness from amaurosis to excess in tobacco-smoking; the connexion of the two being pretty well established in one case by the fact that, on the practice being left off, the sight of the patient was gradually restored. It would be easy for me to refer to other symptoms indicating deficient power of the nervous system to which smokers are liable; but it is unnecessary for me to do so; and, indeed, there are some which I would rather leave them to imagine for themselves than undertake the description of them myself in writing.

"But the ill effects of tobacco are not confined to the nervous system. In many instances there is a loss of the healthy appetite for food, the imperfect state of the digestion being soon rendered manifest by the loss of flesh and the sallow countenance. It is difficult to say what other diseases may not follow the imperfect assimilation of food continued during a long period of time. So many causes are in operation in the human body which may tend in a greater or less degree to the production of organic changes in it, that it is only in some instances we can venture to pronounce as to the precise manner in which a disease that proves mortal has originated. From cases, however, which have fallen under my own observation, and from a consideration of all the circumstances, I cannot entertain a doubt that, if we could obtain accurate statistics on the subject, we should find that the value of life in inveterate smokers is considerably below the average. Nor is this opinion in any degree contradicted by the fact that there are individuals who, in spite of the inhalation of tobacco-smoke, live to be old, and without any material derangement of the health; analogous exceptions to the general rule being met with in the case of those who have indulged too freely in the use of spirituous and fermented liquors.

"In the early part of the present century, tobacco-smoking was

almost wholly confined to what are commonly called the lower grades of society. It was only every now and then that any one who wished to be considered as a gentleman was addicted to it. But since the war on the Spanish peninsula, and the consequent substitution of the cigar for the tobacco-pipe, the case has been entirely altered. The greatest smokers at the present time are to be found, not among those who live by their bodily labour, but among those who are more advantageously situated, who have better opportunities of education, and of whom we have a right to expect that they should constitute the most intelligent and thoughtful members of the community. Nor is the practice confined to grown-up men. Boys, even at the best schools, get the habit of smoking, because they think it manly and fashionable to do so; not unfrequently because they have the example set them by their tutors, and partly because there is no friendly voice to warn them as to the special ill consequences to which it may give rise where the process of growth is not yet completed, and the organs are not yet fully developed.

"The foregoing observations relate to the habit of smoking as it exists among us at the present time. But a still graver question remains to be considered. What will be the result if this habit be continued by future generations? It is but too true that the sins of the fathers are visited upon their children and their children's children. We may here take warning from the fate of the Red Indians of America. An intelligent American physician gives the following explanation of the gradual extinction of this remarkable people:—One generation of them become addicted to the use of the firewater. They have a degenerate and comparatively imbecile progeny, who indulge in the same vicious habit with their parents. *Their* progeny is still more degenerate, and after a few generations the race ceases altogether. We may also take warning from the history of another nation, who some few centuries ago, while following the banners of Solyman the Magnificent, were the terror of Christendom, but who since then, having become more addicted to tobacco-smoking than any of the European nations, are now the lazy and lethargic Turks, held in contempt by all civilised communities.

"In thus placing together the consequences of intemperance in the use of alcohol and that in the use of tobacco, I should be sorry to be misunderstood as regarding these two kinds of intemperance to be in an equal degree pernicious and degrading.

"The inveterate tobacco-smoker may be stupid and lazy, and the habit to which he is addicted may gradually tend to shorten his life and deteriorate his offspring, but the dram-drinker is quarrelsome, mischievous, and often criminal. It is under the influence of gin that the burglar and the murderer become fitted for the task which they have undertaken. The best thing that can be said for dram-drinking is, that it induces disease, which carries the poor wretch prematurely to the grave, and rids the world of the nuisance. But, unfortunately, in this, as in many other cases, what is wanting in quality is made up in quantity. There are checks on one of these evil habits which there are not on the other. The dram-drinker, or, to use a more general term, the drunkard, is held to be a noxious animal. He is an outcast

from all decent society, while there is no such exclusion for the most assiduous smoker.

"The comparison of the effects of tobacco with those of alcohol leads to the consideration of a much wider question than that with which I set out. In all ages of which we have any record mankind have been in the habit of resorting to the use of certain vegetable productions, not as contributing to nourishment, but on account of their having some peculiar influence as stimulants or sedatives (or in some other way) on the nervous system. Tobacco, alcohol, the Indian hemp, the kava of the South Sea Islanders, the Paraguay tea, coffee, and even tea belong to this category. A disposition so universal may almost be regarded as an instinct, and there is sufficient reason to believe that, within certain limits, the indulgence of the instinct is useful. But we must not abuse our instincts. This is one of the most important rules which man, as a responsible being, both for his own sake and for that of others, is bound to observe. Even such moderate agents as tea and coffee taken in excess are prejudicial. How much more so are tobacco and alcohol, tending, as they do, not only to the degradation of the individual, but to that of future generations of our species.

"If tobacco smokers would limit themselves to the occasional indulgence of their appetite, they would do little harm either to themselves or others; but there is always danger that a sensual habit once begun may be carried to excess, and that danger is never so great as in the case of those who are not compelled by the necessities of their situation to be actively employed. For such persons the prudent course is to abstain from smoking altogether.

"Trusting that you and your readers will excuse me for having occupied so large a space in your columns,

"I am, Sir, your obedient servant,

"B. C. BRODIE."

ART. 9.—*Probationary houses for the treatment of incipient Insanity.* By Dr. ANDREW WYNTER.

(*British Med. Journal*, June 23, 1860.)

There can be no doubt that the law, as it at present stands, with regard to the incarceration of persons of unsound mind, is fast giving way. As long as the term "lunatic" was limited to the raving maniac, the seizure of the unfortunate individual by any stratagem, and his forcible detention in an asylum, were procedures imperatively called for; but with the growth of psychological medicine, this acute type of mental disease has descended to a subordinate place in the category of mental afflictions; and the alienist physician is called upon to treat an infinity of cases which heretofore would not have been considered to come within his speciality at all. The almost infinite shades of mental alienation—the very flutter, as it were, of the mind between sanity and madness, which we are called upon to watch more narrowly year by year—has introduced a state of things to meet which the lunacy law, as regards asylums, is becoming every day more unsuitable. We see evidence of this truth in the many

disputes which have arisen between the Lunacy Commissioners and the proprietors of asylums with regard to the admission of patients upon (so-called) improperly filled up certificates, and in the lawsuits which have been instituted by patients against those whom they have accused of detaining them while in a sane state.

The reason of this unseemly struggle is clearly traceable to the difficulty of fixing the exact amount of madness which renders a patient liable to be certificated. So great has this difficulty become, that it is a well-known fact that many physicians absolutely refuse to sign certificates, except in cases of confirmed lunatics. This growing indisposition to sign on the part of the profession—an indisposition forced upon them by the inelasticity of the form of certificate itself, and by the literal manner in which it is read by the Commissioners—is, however, a great calamity to the patient himself, inasmuch as, during the hesitation to sign or not to sign, the golden moments are allowed to slip, during which proper curative treatment is found to be so effectual.

We are not at all astonished to find that Mr. Gaskell, one of the medical members of the Lunacy Commission, has given expression in the 'Asylum Journal' to the general feeling in the profession that, in order to meet this difficulty of the certificate in the incipient stages of insanity—a difficulty which is filling our asylums with confirmed lunatics—there should be established probationary houses for the treatment of the earlier stages of insanity. He says:

"It seems desirable to extend legal sanction to a class of houses into which patients should be allowed to place themselves voluntarily, or to be admitted on less complicated or stringent documents; and further, that in them a limited control only should be exercised over the inmates, extending possibly to certain rules of the house, a required presence at the family table, return home at an early hour, and strict prevention of absence during the night-time. Such places, offering an agreeable change of scene, quiet and retirement, as well as the benefit of good advice, would afford a means of treatment much to be desired for incipient and transient cases."

The necessity for such probationary houses as these we have ourselves pointed out years ago in the pages of the 'Quarterly Review.' We rejoice, therefore, to find one of the most enlightened of the Commissioners giving a quasi-official weight to the scheme. It must be remembered, however, that upon the amount of official interference thrust upon such establishments, must depend their usefulness. Any system which placed them in the position of *petit* asylums would at once render them useless. The further such establishments departed in their management from that which obtains in private houses, the more effete they would become. We do not know what amount of supervision Mr. Gaskell would propose the Commissioners should have over such houses; but it must be quite clear that anything like an active interference would at once identify them with the regular asylums, and thus utterly mar their usefulness.

The value of such establishments for convalescents from insanity must also be apparent. They would serve to pass the patient through the transition state from the seclusion of the asylum to the busy,

bustling work-day world. It has often happened that the too abrupt departure of a patient supposed to be cured, has been followed by his immediate return to the asylum in a more melancholy condition of insanity than ever. It strikes us that, with respect to these convalescent cases, a much stricter system of supervision would be both useful and tolerated than in the cases of incipient or transient insanity, inasmuch as the major examination, if we might so term it, would include the minor one—in other words, a person who had once suffered the stigma of having been in an asylum, would not object to the mild rule of a convalescent establishment. If probationary houses were established with only a fair amount of freedom of action, there can be no doubt that an immense amount of incipient insanity, at present hidden in water-cure establishments, and in private houses, would at once come to light; but, as certainly as the legal supervision became strict, so certainly would these cases return again to private families, where alone that publicity, which it is so natural the friends of the afflicted should deprecate, can be effectually avoided.

ART. 10.—*New experiments regarding the origin of Cow-pox.* By Dr. A. FONTAN.

(*L'Union Médicale*, May 29, 1860; *Edinburgh Medical Journal*, July, 1860.)

"A happy accident," writes Dr. A. Fontan, "occasioned my passing through Toulouse at a time when a question of the highest importance was being submitted to experiment,—I mean the question of the origin of vaccinia. The following is an abstract of the principal facts: Some weeks ago, M. Sarrans, of Rieumes, observed that several mares brought back to his establishment for the second or third time, were affected with the *grease* (*eaux-aux-jambes*). There was a sort of epidemic of the affection, for nearly a hundred horses were found to be suffering from it. The variety of grease was the pustular form.

"One of these mares was taken to Toulouse to the veterinary school, where the learned Professor M. Laffosse soon recognised the true character of the epidemic. He inoculated with some of the matter of these pustules the teat of a cow, in the presence of his assistant and numerous pupils. Soon afterwards fine pustules made their appearance on the udder of the cow. One of the most distinguished physicians of Toulouse, Dr. Cayrel, the official vaccinator of Toulouse, vaccinated, with matter from the pustules of the cow, several infants who had never been vaccinated. Well characterised vaccine vesicles followed, presenting their pearly aspect, central depression, and rose-coloured areola, increasing in size from day to day without any trace of erysipelatous inflammation.

"A second cow was vaccinated with matter from the first cow, and infants were vaccinated with the matter from the second cow: the results were equally satisfactory as in the former case. At present they have arrived at the fourth vaccination from the first cow, and at the third from the second cow. I was present at this vaccination; the vesicles were very fine. One was photographed in my presence,

with a tolerably satisfactory result. The vesicle presented the most characteristic appearance of vaccinia. When pricked, no purulent matter escaped, but gradually a serous fluid oozed out in great abundance, with which several infants were vaccinated.

"The new matter is very active, and succeeded in the case of a pupil of the veterinary school, vaccinated in infancy, and in whom all previous attempts at revaccination had failed. I saw a vesicle in an infant produced by the virus of this pupil, finer and more developed than three other vesicles produced by an ordinary vaccination in the same infant. (No doubt the two vaccinations were performed simultaneously.)

"Already thirty infants have been vaccinated at Toulouse. No unpleasant symptoms have manifested themselves in any case; and in all, the result has been most satisfactory.

"Dr. Izarié, formerly vaccinator in Paris, considered the vesicles so good, that he had his son vaccinated this morning with virus from one of the infants.

"An official commission has been named by the prefect to carry out these experiments. A report will be drawn up and communicated in due time."

Art. 11.—*Results of Vaccination in the Prussian army, during* 1859. By Dr. ——

(*Berlin Med. Zeitung*, No. 14, 1860; and *Medical Times and Gazette*, June 2, 1860.)

In the year 1859 there were 67,657 individuals vaccinated. Of this number, signs of former vaccination were in 55,997 distinct; 7760 indistinct; 3892 non-existent. The course of the present vaccination was in 41,711 regular; 8419 irregular; 17,527 unsuccessful. Another vaccination succeeded with 5013 of this last category, making altogether 46,724 successful vaccinations; *i.e.* 69 per cent. In a dragoon regiment, two individuals who had formerly suffered from true variola exhibited normal vesicles after re-vaccination. In one case, not only did vaccine pustules appear at the points of vaccination, but likewise over the entire surface of the body, accompanied by fever and difficulty of swallowing, which, however, diminished in two days.

Throughout the large Prussian army but 58 individuals were affected by any variolous affection; viz. 15 by varicella, 40 by varioloid, and 3 by true variola. Of these, 17 cases (4 varicella and 13 varioloid) occurred in those who had not been re-vaccinated; 27 cases (9 varicella, 17 varioloid, and 1 variola) in those who had been re-vaccinated without success; and 14 (2 varicella, 10 varioloid, and 2 variola) in those who had been successfully vaccinated. In a portion of this last category the vaccination had been performed from ten to twenty-five years ago. In the great majority of cases the affection was quite insignificant; but still there were cases in which its course was violent, so that two deaths resulted, one from variola and the other from an excessive eruption of varioloid—both persons having been unsuccessfully re-vaccinated.

Art. 12.—*On the best preservative from Hydrophobia.* By M. A. Samson.

(*Journ. of Pract. Med. and Surg.*, July, 1860.)

Struck with the inanity of the measures and means of all sorts proposed every year for diminishing the disastrous effects of rabies, Mr. Samson has thought that one means only exists of preserving us from this scourge—the knowledge of the exact cause of the insidious and little known phenomena of the beginning of this terrible affection. For this purpose it is indispensable to destroy certain errors prevalent among the public, and this is precisely the end Mr. Samson endeavours to attain.

And first, despite the word which designates it, rabies may exist for a certain time before any phenomenon of furor is manifest. In its earliest stage, the animal has no aversion to water, as he is supposed to have; he even often drinks with avidity. Now, what is his attitude? From the description of a learned English veterinary surgeon, Mr. Youatt, and from his personal observation, the author sketches with a masterly hand a graphic picture of the physiognomy and gait of the mad dog in the beginning of the disease. At this moment the animal retires to the kennel; *he shows no inclination to bite, and obeys*, although slowly, his master's voice. But his body is, as it were, contracted, and he hides his head between his chest and fore-feet. He then becomes restless, seeks a new place, returns to his litter, and moves about without being able to find a position that suits him; his appearance is gloomy and suspicious; he goes from one to another, as if to crave assistance, far from flying from his master's house. If he is of a mild and affectionate disposition, he remains caressing, perhaps more even than in health. In snarling and vicious animals only, the aspect becomes terrifying, and the eyes express ferocity.

An important phenomenon is again the depravity of the appetite; the animal eagerly seizing matters improper for nutritive purposes; also an intense thirst, which seems to proceed from inflammation of the fauces, and is often attributed to a mechanical cause, to a bone he may have swallowed, &c.

It is, however, at the last period only of the disease that the foaming at the mouth is seen, although this is popularly regarded as an infallible sign of rabies. At an early stage, on the contrary, the mouth and throat are dry in consequence of the paralysis of the muscles of the pharynx, which succeeds the angina of rabies, the saliva, the deglutition of which is rendered impossible, mechanically flowing from the mouth.

But there is an unmistakable sign, which is never forgotten by those who have once heard it, it is the *howling of the rabid animal.* The voice of the mad dog undergoes a special modification, which conclusively points to the diagnosis. Nothing is more convincing than the following fact, related by Mr. Bouley:

"One Sunday, two pupils returning to the School (Veterinary) of Alfort, at nine o'clock in the evening, heard the howling peculiar to

rabies, which proceeded from a watch-dog in a neighbouring house. They hastened to apprise its master of the impending danger. Fortunately the dog was still chained up, and was not released that night. On the following morning he was taken to the school, and pronounced to be rabid, to the great astonishment of its owner, who could not believe that this animal, *still as docile, as caressing and obedient* as in health, was attacked with so terrible a disease. The presence of mind of these pupils doubtless prevented great misfortunes; had it not been for their interposition, this dog, which was of a large size, would have been let loose, perhaps have escaped, and might have occasioned many accidents in the surrounding country."

In this instance, the diagnosis reposed on the mere sound of the voice, and was accurate. Mr. Samson, then a pupil of the school, saw, some days after, the same dog die with all the symptoms of rabies.

ART. 13.—*On the cure of the Deaf and Dumb by dropping sulphuric ether into the ear.* By MM. BEHIER, TRIQUET, and others.

(*Journ. de Med. et de Chir. Pratiq.*, Aug., 1860.)

Four or five years ago, Mdlle. Cléret, a private teacher living in a suburb of Paris, applied to the Minister of Public Instruction for assistance in carrying out a new mode of curing deaf and dumb persons. This mode was by dropping from four to eight drops of sulphuric ether into the ear every day. A committee was appointed to inquire, of which M. Behier was a member. Speaking of what he saw, this gentleman says, "We saw deaf and dumb children, perfect little savages before the treatment, become tractable and obedient as soon as the improvement of their deafness began to make them amenable to direction. Ether is a purely empirical remedy. When is this agent useful? when is it not? These are questions which I cannot answer. All I know is, that the only unfortunate result I have seen from its use has been its failure in certain cases. It causes a little pain; it is sometimes badly borne; in these cases it is sufficient to employ it at longer intervals. Although I do not use the remedy in my own practice, I could cite four new cases of complete deafness cured by the instillation of ether since the publication of my report."

M. Fonssagrives has not as yet published the result of his experiments; but some other practitioners, in reply to the appeal of Dr. Debout, have published a certain number of cases, which are, on the whole, favorable to the remedy of Mdlle. Cléret.

Still, we persist in the belief that ether will not realise the exaggerated expectations which have been entertained regarding it. If it only relieve deafness by dissolving the cerumen which encrusts the membrana tympani, it can only act by relieving a morbid condition hitherto unknown, and which unfortunately, to judge from certain statistics furnished us by Dr. Triquet, aurist in Paris, is not the most common cause of deafness.

Up to the 18th of July, M. Triquet had treated by ether 110 patients (rich and poor) affected, some with chronic catarrh of the middle

ear, others with nervous deafness—all *deaf*, be it well understood, and subject to ringing in the ears. In all these cases, care had been taken to test the power of hearing before and after the treatment. The result has been this: The patients have been treated with thirty to forty drops of ether every three, five, or seven days, rarely every day. There has always been immediate pain, without consecutive amelioration; far from it,—the deafness and the ringing in the ears have augmented progressively with the number of instillations. In twenty cases the pain and redness of the auditory canal have been so violent as to have necessitated the employment of antiphlogistics. The patients (women) have suffered from headache, which has continued for weeks, and deprived them of sleep, although the treatment was suspended on the very day that the headache was experienced.

M. Triquet had thought, as the result of his first trials, that ether might be used without inconvenience to dissolve ceruminous concretions; but he is now forced to confess that, even in these cases, its uses may occasion accidents, such as otitis, with considerable swelling of the lining membrane of the auditory meatus.

On the whole, the instillation of ether in the case of 110 patients, made with all possible precaution, has not produced, according to Dr. Triquet, any perceptible amelioration, and in a considerable proportion has manifestly aggravated the condition of the patients. The author may, no doubt, be reproached with having unconsciously, in his character of specialist, deepened the shadows in the above picture; but, even charging to the account of individual susceptibility the accidents attributed to ether, we must still see here a list of 110 failures out of 110 patients. This result, it must be allowed, is not encouraging; and there is much reason to apprehend that M. Menière only expressed the truth in writing to M. Debout, that a belief in the efficacy of ether to cure deafness was one of those generous dreams which pass away with the morning light.

ART. 14.—*Report on the causes of death among the Assured of the Scottish Widows' Fund Life Society for the period from 1st January, 1853, to 1st January, 1860.* By Dr. BEGBIE, Physician in Ordinary to the Queen, in Scotland.

(*Edinburgh Medical Journal*, Aug., 1860.)

The septennial period recently completed has added 975 to the list of emerged risks on the books of the Society, and raised the deaths from 1332, the number declared at the former investigation, to 2307—the gross mortality from the commencement of the institution in 1815 to the close of the year 1859, a period of forty-five years.

These 975 deaths have occurred among 8955 persons exposed to the risk of mortality.

The deaths from all causes combined, during the last seven years, have greatly exceeded those of the previous seven years of the Society's experience; but proportionally in a smaller ratio than might have been expected from the constant increase of membership, and the mature age the Society has now attained.

In regard to the class of epidemic and contagious diseases, there has been a considerable diminution in almost all the causes of death which constitute the class—namely, from 130 in the former investigation, to 107 in the present; that is, from 18¾ per cent. to 11 per cent. of the total mortality.

In the class of diseases of uncertain seat, there is a slight increase—the number of deaths from these causes being 59 on this occasion, and 40 at the former septennial period, that is, from 5¾ to 6 per cent. of the total mortality. This increase arises mainly from one source, namely, cancer, under which there are 28 deaths against 5 in our former table. It is gratifying to find that, in consequence of the greater attention to accuracy, debility has no place in them, and that dropsy only figures as the cause of 4 deaths. The causes which have led to the large addition to the mortality from cancer, no doubt, originate in the same improvement in the certificates of death; but they can be traced also to the circumstance that the advanced age of the society has brought forward an increasing number of risks to the age at which malignant disease more commonly develops itself.

In the class of diseases of the brain and nervous system, there is a considerable increase of deaths. In the former investigation this class of diseases accounted for 150 deaths, or 21¾ per cent. of the total mortality; in the present it accounts for 234, or 23¾ per cent. of that mortality. The increase arises from one disease alone, namely, paralysis, which has risen in fatality from 28, or 4 per cent., to 79, or 8 per cent., of the total deaths among the assured. Apoplexy, which yielded 8 per cent. on the former, is reduced to 6¾ per cent. in the present scrutiny; and chronic diseases of the brain, which were fatal in the proportion of 7¼, occasion only 6¾ per cent. of the mortality of the last seven years.

The following table exhibits the mortality from apoplexy, palsy, and chronic disease of the brain, compared with that from all other causes, at six decennial periods, and the percentage of death at the successive ages:

Age at Death.	From all Causes.	From Apoplexy, Palsy and Disease of Brain.	Ratio per Cent.
Between 20 and 30	33	3	9·09
„ 30 „ 40	106	16	15·09
„ 40 „ 50	167	36	21·55
„ 50 „ 60	245	52	21·23
„ 60 „ 70	242	57	23·55
Above 70	182	52	28·57
Total	975	216	22·15

Among the diseases of the respiratory organs, there is, during the last septennial period, a slight increase of mortality. During the

former period 129 deaths, or 18¾ per cent. of the total mortality, were reported under this head, showing a decided decrease as compared with the gross mortality from the commencement of the society up to that period, which had been found to be so high as 23¾ per cent. On the present occasion, 195 deaths, or 20 per cent. of the total mortality, are returned under this class; and it is satisfactory to find, that consumption, the most fatal cause among diseases of the respiratory organs, still maintains a greatly diminished rate of mortality. In the first investigation into the causes of death, consumption accounted for 72 out of 642 deaths, or nearly 11 per cent. of the gross mortality; in the last investigation it accounted for 42 out of 690 deaths, or 6 per cent. of the mortality; and, in the present scrutiny, we find 66 out of 975 deaths, or 6¾ per cent., accounted for from this cause. This is a low percentage compared with the mortality from this cause over England and Wales, which the Registrar-General has shown to be as high as 20 per cent., and small in proportion to the mortality exhibited among other associations, for Dr. Christison, in his last report on the deaths of the Standard Company, has shown that 60 out of 424 deaths, or upwards of 14 per cent. of the whole mortality, had arisen from consumption.

The following table exhibits the mortality from consumption, compared with that from all other causes, at six decennial periods, and the percentage of death at the successive ages:

Age at Death.	From all Causes.	From Consumption.	Ratio per Cent.
Between 20 and 30	33	9	27·27
„ 30 „ 40	106	16	15·09
„ 40 „ 50	167	22	13·17
„ 50 „ 60	245	16	6·53
„ 60 „ 70	242	3	1·24
Above 70	182	0	0·00
Total	975	66	6·77

A considerable increase of deaths from diseases of the respiratory organs has been acknowledged during the last septennial period. The source of it has proved unexpected. During the first thirty-eight years of the society's experience, the deaths from pneumonia were only 25 in number, or 1⅛ per cent. of the total mortality; but during the seven years which have just elapsed, the deaths from this cause amount to 42, or 4¼ per cent. of the general mortality, and only ¼ per cent. short of that of bronchitis, from which, for many years past, the rate of death has been very high. The deaths from pneumonia were distributed over all ages, from the earliest period of assurance to the threescore years and ten; 14 only, however, occurred before the age

of fifty; and 28 after that period of life, a larger number having died between sixty and seventy than during any other decennial period.

Under the head of diseases of the heart and blood-vessels, there has been a large increase of deaths during the last septennial period. In the first report presented to the society, the deaths were 53 in number, or 8¼ per cent. of the total mortality; in the second report they amounted to 66, or 9½ per cent.; but in the present investigation they reach the somewhat alarming number of 135—that is, 13¾ per cent. of the total mortality. This at first sight may appear discouraging, but is satisfactorily accounted for. Chronic disease of the heart, which accounts for 122 of the 135 deaths, or 12½ per cent. of the general mortality, is, perhaps more than any other, the disease of old age; and hence we find, on a reference to our tables, that of these 122 deaths 22 only occurred before the age of fifty, thus leaving 100 to be distributed over the four consecutive decennial periods in the proportions following: 28 between fifty and sixty; 41 between sixty and seventy; 25 between seventy and eighty; and 6 beyond eighty years of age.

The following table exhibits the mortality from chronic disease of the heart, compared with that from all other causes, in the decennial periods, and the percentage of death at the successive ages:

Age at Death.	From all Causes.	From Heart Disease.	Ratio per Cent.
Between 20 and 30	33	0	0·
„ 30 „ 40	106	8	7·55
„ 40 „ 50	167	14	8·38
„ 50 „ 60	245	28	11·43
„ 60 „ 70	242	41	16·94
Above 70	182	31	17·03
Total	975	122	12·51

Under diseases of the digestive organs there is a diminished mortality—that is, from 13¾ per cent. during the former period to 11¾ per cent. of the total mortality during the last seven years. Chronic disease of the stomach and bowels, and chronic disease of the liver, constitute the chief causes of death under this head; the former, however, in considerably diminished numbers; the latter in nearly the same proportion as in the last investigation—the one yielding 3½ per cent., the other 5 per cent., of the general mortality.

Of deaths from diseases of the urinary organs there is a slight increase. This class, on the last occasion, accounted for 30 deaths, or 4½ per cent. of the whole; on the present they number 52, or 5¼ per cent. of the mortality. The increase arises entirely from one cause, namely, disease of the kidney, which rises from 15 to 39—that is, from 2¼ per cent. to 4 per cent. of the total mortality.

The deaths in childbed and diseases of the uterus are only 2 in number—one from abortion, the other from ovarian dropsy.

Under diseases of the joints there is an increase of deaths, 14 in the present, 4 in the last report. In 7 cases the cause was rheumatism, acute or chronic; in 5, "disease of the joints;" in 2, disease of the spine.

Under the head of violent deaths are 29 deaths, or 3 per cent. of the total mortality. Of these, 6 were from suicide.

Under the head of old age and natural decay are 29 deaths, whose conjunct expectation on acceptance was 538·84 years, but who outlived that term till their united survivancy amounted to 708·85 years, each on an average thus attaining 24·44 years in place of 18·58 years, their average expectation of life.

The causes of 3 remaining deaths were not ascertained, or rather were not ascertainable.

ART. 15.—*Infantile Death-rates, in their bearing upon sanitary and social science.* By Dr. W. T. GAIRDNER, Physician to the Royal Infirmary at Edinburgh.

(*British Med. Journal*, Oct. 6, 1860.)

After some preliminary remarks on the great value justly attached to the death-rates of young children, as indicating the favorable or unfavorable sanitary position of a community, Dr. Gairdner says that the importance of the infantile death-rates depended on two considerations—first, that infants were much more easily affected than the general community by most of those causes of disease and death which were common to all; and secondly, that their dependance upon their parents for bodily organization, as well as for proper nourishment and support subsequent to birth, made the sanitary state of very young children a most delicate test of the real health and well-being of the parents—*i. e.*, of their social and moral condition at the productive period of life, and in so far as concerns the domestic relation. After stating that he has chosen to confine himself to the period under one year in preference to the more usual one of under five years, as representing the death-rate of the earliest period of life, and as representing in the most distinct form the hazards to which infant lives were exposed, he proceeds to ask whether we could arrive at any secure conclusions, as to the relation which the infantile bears to the general death-rate. In order to solve this problem he has availed himself very fully of the laborious calculations appended by the Registrar-General of England to his 'Ninth Annual Report,' in which are given a death-rate for each sex, and for every separate age of human life, in every division and county, and in 324 districts in England, calculated for the years 1838-44, and for the census of 1841. On considering broadly the death-rate of very young infants, as compared with that of the general population, it is found to be immensely different, inasmuch as it is rather a moderate statement of the case, to say that where 20 represents the general death-rate, 150 will be the death-rate of

infants less than a year old; or, in other words, that the infantile is 7½ times the general death-rate. This is undoubtedly the case so frequently, that it might be said to be, in one sense of the word, a normal fact. But it was not always a normal fact for the infantile death-rate to be 7½ times the general death-rate. By a further consideration of the returns of the Registrar-General, it appears, that as the death-rates themselves rise or fall, their proportion to one another commonly rises or falls also. Thus, when the general death-rate is so low as 16 in 1000, it is probably nominal for the infantile death-rate not to exceed 6½ times the general death-rate; and when the general death-rate is so high as 22 in 1000, it is probably so common as to be nominal—though of course not a desirable result—for the infantile death-rate to be 8½ times the general death-rate. This tells a tale of some importance as regards the tenure (so to speak) of infant life—the conditions on which the young infant lives, moves, and has his being; for the enlargement of the ratio between the infantile and general death-rate, according as the rates themselves increase, shows nothing less than this—that, generally speaking, the causes which produce a high rate of general mortality, have a still greater tendency to produce a high-rate of infant mortality, and operate upon the infant life to a far greater degree.

Dr. Gairdner then gives a few illustrations of the laws of infant mortality. First, as regards the districts and counties having very low death-rates, both infantile and general, and consequently a low ratio of the one to the other. These privileged districts were found to be mostly rural, often to a great extent pastoral in character; the population commonly sparse, the towns few and small, the face of the country uneven or perhaps mountainous; in many such districts there were valuable minerals, and a considerable amount of mining industry; agriculture pursued in some of them to a very considerable extent; in others hardly any predominating industry, but a small population supported in a variety of ways, upon a soil which did not repay large advances of capital. He has, however, been greatly startled to find, in most of the great corn-growing counties of England, that not only was the infantile death-rate much higher than it ought to be, considering the amount of the general death-rate; but higher, also, than it ought to be, considering the eminently rural character of the population, the small size of the towns, and the small number of persons to each acre of surface. It has been found that in no less than eleven of the fourteen counties of England most devoted to agriculture, the ratio of the infantile to the general death-rate was higher than that indicated as the mean rate for their general death-rate; and further, that the ratio was enormously high. He has come to the conclusion that in almost all of the eminently agricultural counties the destruction of infant life was in excess of what might be expected under the circumstances; and he could arrive at no other conclusion than this—that the habits of the great agricultural populations of England, probably of slow formation, and transmitted down from generation to generation in some way or other, were apt to give rise to neglect of the family relation or of maternal duty, and that the employment of women in some counties

in special industries was one consequence of this habitual neglect, while the imperfect rearing of children was another, and a still more widely spread consequence of it.

Dr. Gairdner then refers to the infantile death-rates of London, remarking that the west-end districts of London had a death-rate much below the average of town districts, and that even taking into account the "slums" of Westminster and the infirm population of St. Martin-in-the-Fields, the mean death-rate of all the districts, which were the great seats of business and fashionable life, were decidedly below London as a whole, and still more below the average of other great cities. He then directs special attention to the fact that the infant mortality in London bore no appreciable proportion to the general death-rate. A careful consideration of the Registrar-General's returns had led him to the conclusion that all the West end districts of London are fatal to children in a proportion which was really enormous, when the favorable state of the general death-rate was considered. For example, St, George's, Hanover Square, with very nearly the lowest general death-rate in London, was, with all its wealth and splendour, only a little less fatal to infants than Shoreditch, Bermondsey, and Lambeth. It was more fatal than the Strand district or Stepney, far more fatal than Greenwich, and in a still more striking proportion, more fatal than Wandsworth, Camberwell, and the outlying districts in general. Even the sailors around the docks, and the tradesmen and artisans of the Strand and City districts, might boast that their contribution to the infantile mortality was small compared with that of the rich, prosperous, and polished west end.

Dr. Gairdner, in conclusion, alludes to the deductive conclusions which he had drawn as to the influence of large agricultural populations on the infantile death-rate, and the influence of the West end of London, and confessed that these startled him with something like a sense of novelty. If they were facts, and not mere play of the fancy, he ventures to call them stupendous facts, deserving immediate attention, and calling for remedy with a voice far more eloquent than any words in which they could possibly be uttered. He shrinks from the idea, with the imperfect data before him, of attempting to expatiate upon this subject, or to explore the whole depths of these tremendous evils. Possibly the subject might be again resumed with larger knowledge. In the mean time it would be sufficient for his purpose if attention be awakened to some of the evils which afflict the most helpless age of humanity, and tend to poison the springs of health for the entire English race.

ART. 16.—*Report on the loss of limbs, as affecting longevity, among the Pensioners at the Royal Hospital, Greenwich.* By Dr. J. C. MESSER, R.N., Assistant-surgeon, Greenwich Hospital.

(*Edin. Monthly Journal*, Oct., 1860.)

During the five years, from June 1854 to June 1859, the average age of pensioners dying in hospital, has been 71·3 years.

Average age at death, of all pensioners, in five years	71·3 years.
Average age at death of pensioners who have lost limbs in thirteen years	67·6 „
Average age of forty pensioners now alive who have lost limbs	69·2 „

From which we may conclude that the pensioners who have lost limbs do not arrive at so great an age as those who have not, the difference being in the proportion of 71·3 to 67·6. At the same time, we notice that the pensioners now alive who have lost limbs have a higher average age than those who have died during the last thirteen years under similar circumstances—a fact for which no very adequate reason can be adduced.

(B) ACUTE DISEASES.

ART. 17.—*On relapsing or recurrent Fever.*

By Dr. TWEEDIE, Physician to the London Fever Hospital.

(*Lancet*, April 28, 1860.)

Relapsing or recurrent fever has been thought by some to resemble the *suette*, or sweating fever of Normandy, and by others the yellow fever of the West Indies. Dr. Wardell says, "There were undoubtedly some considerations which led to the supposition that the epidemic relapsing fever bore certain resemblance to the suette, or sweating fever of Normandy. In a few instances, though these were of rare occurrence, the epidermoid tissue was raised into vesicular eminences, varying from the size of a millet seed to the section of a small pea, these vesicles containing a transparent fluid, and quite unattended with any areolar blush. On the third day they became shrivelled and opaque, and desquamated in thin, furfuraceous scales. From the occasional presence of these bullæ with other more logical characters, some degree of similarity certainly was manifest between it and the suette. There were physicians who endeavoured to show its near alliance to the yellow fever of the West Indies—indeed gave it as their opinion that, in some respects, there was a positive identity between the two, only that the epidemic prevalent in this country had become greatly modified by climate and other circumstances calculated to alter its general features. When we take into consideration the usual number of yellow cases, together with two or three cases of less important correspondent symptoms, we are compelled to admit that the assertion is not wholly unfounded. No trace of its importation into Scotland, however, could be found, which has generally been the case where yellow fever has been communicated from one country to another."

Relapsing fever has always appeared to the author to be a form intermediate between the continued and periodic, but having a more close analogy to the latter. He has been led to this view by considering the suddenness of the invasion, the abrupt termination of the symptoms after a definite period by copious and apparently critical sweat, the interruption of the convalescence by a similar, though

shorter paroxysm, or it may be paroxysms of nearly certain duration, and a final abrupt cessation of the disease generally after critical sweating. Even in the more severe cases, in which there was gastric disturbance with jaundice, and occasionally cerebral symptoms, the resemblance to the malignant or pernicious periodic fevers, more particularly those included under the bilious remittents of tropical climates, is striking.

Symptoms and progress.—In relapsing fever the invasion is sudden. The patient, previously in good health, without warning, is seized with a feeling of indisposition, complaining of chilliness or shivering, acute headache, languor and lassitude, severe muscular aching, and arthritic pains. The appetite fails, the skin becomes hot and dry, the tongue white, the desire for fluids constant, and the urine scanty and high-coloured. Towards evening, the symptoms are aggravated; the night is passed either in restless agitation or with snatches of unrefreshing sleep. Occasionally the heat of skin is relieved by irregular sweating, but still the other symptoms suffer no diminution. Vomiting of bilious fluid, often accompanied with pain at the epigastrium, is an early and nearly constant symptom. It may occur in the first or primary fever only, or it may come on in the relapse also. As the disease progresses, the patient becomes more prostrate and disinclined for bodily or mental exertion, the pulse more rapid and tense, the tongue more thickly coated, the bowels constipated, the muscular and arthritic pains more acute; and the nights are passed in restlessness and wakefulness, unless the nervous system be calmed by the aid of opiates.

About the third day a marked remission of the symptoms is often observed; but whether there be a remission or not, at a period varying from three to seven days—more commonly on the fifth day—a copious general sweat breaks out, and almost immediately afterwards the fever vanishes, leaving the patient unexpectedly free from the painful symptoms with which a few hours previously he had been harassed. Dr. Cormack, who watched the phases of this singular disease, tells us that the change for the better was often sudden and complete, the patient one day moaning and groaning in pain, and on the next at his ease and cheerful, complaining only of hunger and weakness.

This apparent convalescence, however, is not of long duration, for when the patient and his medical attendant reasonably conclude, from the favorable change that has occurred, that the fever is at an end, and that time only is required for complete restoration to health, a sudden and unlooked-for recurrence of the previous symptoms takes place. This relapse happens at some period between the twelfth and the twentieth day (from the beginning of the disease), or on or about the seventh after the crisis, and without apparent cause or indiscretion on the part of the patient. The relapse is indicated by the same symptoms as the primary fever—rigors, headache, muscular aching, hot skin, thirst, quickened pulse (the rapidity being often disproportionate to the other symptoms), coated tongue and loss of appetite.

After a few days—two, three, four, or five—this second attack suddenly ceases after a profuse sweat, and the patient becomes a

second time convalescent. The return to health is comparatively rapid and complete in the young and vigorous, but in the aged, and especially in those who have been previously in indifferent health, the strength is more slowly regained.

Nor does the mildness or severity of the relapse appear to be influenced by the previous attack; for it has been observed that the symptoms of the second are sometimes more mild, at other times more severe, than those of the primary fever. In some instances, for example, in which the first attack was by no means severe, the second has been characterised by delirium, deep jaundice, violent purging, and other grave symptoms. Such cases are, however, not common.

Sometimes, again, a second but mild relapse takes place, generally about the twenty-first day; and I have already alluded to the circumstance, that patients have suffered three, four, and even five separate and distinct attacks. Such frequent relapsings have been seldom noticed in the epidemics in England.

Other anomalies are, in some instances, observed. Thus, the symptoms of the relapse, instead of appearing suddenly, come on gradually and insidiously; or, instead of the ordinary well-marked progress of the symptoms, there may be only slight acceleration of pulse, and a little increased heat of skin, to mark its occurrence; occasionally, in place of the abrupt termination of the attack by sweating, the crisis has apparently been connected with some other evacuation, such as hæmorrhage from the nose, diarrhœa, or the menstrual discharge. In some cases, on the other hand, in which the ordinary symptoms of the first attack have been well marked, there has been no relapse, nor anything approaching to a recurrence.

There appears, too, to be a greater tendency in relapsing fever than in other acute diseases in pregnant women to abortion or premature delivery. So invariably, indeed, according to Dr. Wardell's experience, did this happen, that throughout the whole duration of the Edinburgh epidemic—a period extending over at least fourteen or fifteen months—he never discovered even a solitary instance of the impregnated uterus not expelling its contents; and the statements of others, whose opportunities of observing this fever were equally ample, confirm this statement. The same tendency to abortion was observed in the patients received into the London Fever Hospital.

The relapsing fever sometimes, however, assumes a more severe character, the aspect of the symptoms from the commencement indicating a much more serious disease. The rigors are violent; the heat of skin is intense; the heart's action depressed, indicated by the softness and compressibility of the pulse; the patient complains of extreme prostration, and feelings of exhaustion or sinking; there is often incessant vomiting of bilious fluid, accompanied with a more or less deep-jaundiced appearance of the skin, though the evacuations exhibit no deficiency of bilious admixture, but the urine is generally loaded with bile.

In some cases, sudden collapse takes place—the pulse becomes rapid and feeble; the skin universally cold, more especially the hands and feet; the face livid; partial or complete unconsciousness suc-

ceeds; the sphincters become relaxed, and death takes place after a few hours.

The *diagnosis* of relapsing fever may be given in a few words.

It differs from other forms of fever—1, by its sudden invasion; 2, by the short duration of the primary fever, and its termination by an evident crisis; 3, by the almost uniform occurrence of a relapse—occasionally a second or third; 4, by the unusual number of cases with more or less jaundice or yellow colour of the skin, accompanied often with gastro-enteritic and gastro-splenic symptoms; and 5, by the absence of characteristic rash.

The small *mortality*, or death-rate, of relapsing fever shows its comparative mildness, being about one in twenty-five, or under 3·9 per cent.

Anatomical characters.—This singular form of fever, if uncomplicated, seldom proves fatal. In examination of the fatal cases, no special lesion, so invariably present as to indicate the anatomical character of the disease, has been discovered.

The *blood* has in some cases been found throughout the body in a fluid state, indicating a decrease in the normal amount of fibrin. I am not aware that it has been subjected to further chemical analysis.

The *brain*, with the exception of a moderate amount of subarachnoid serosity, and perhaps an increased quantity in the ventricles, shows no remarkable deviation from a normal state.

The *heart* and *lungs* exhibit no evidence of disease.

The *liver* has been found enlarged from congestion, and the gall-bladder more than usually distended with bile; and, what may be considered worthy of being noted, no obstruction to the free escape of the bile through the ducts, even in cases in which the jaundice had been well marked, can be detected.

No disease in any portion of the alimentary canal is discoverable.

The *spleen* exhibits the most marked and constant lesion, more especially as to size or volume. It was noticed in a considerable number of cases in the Edinburgh epidemic, 1843-4. Dr. Wardell saw several in which this organ was three or four times larger than natural; in one, it weighed twenty ounces. This splenic enlargement was observed by other physicians during the same epidemic; thus, in a fatal case examined at the London Fever Hospital, the spleen weighed thirty-eight ounces. It thus appears that this organ is occasionally larger in relapsing than in either typhus or enteric fever.

Urea has been found in the blood. In a fatal case recorded by Dr. Wardell, in which the patient fell into a state of stupor twenty-four hours before death, crystals of nitrate of urea were discovered in considerable abundance in the blood taken by cupping, ordered for the relief of the cerebral symptoms.

It thus appears that, with the exception of splenic enlargement—a lesion common to the other forms of fever, continued and periodic—there is no special lesion found after death in relapsing fever. If structural changes be discovered, they are to be regarded as accidental, and due to some secondary or intercurrent affection.

Art. 18.—*On the cure of Typhoid Fever.*
By Dr. Brinton, Physician to St. Thomas's Hospital.

(*Lancet*, April 21, 1860.)

"I am afraid," says Dr. Brinton, in some clinical remarks, "to say how old is the recommendation of emetics in the earlier stages of many febrile disorders. But Sir Henry Holland, who some years ago attempted, in his classical work ('Medical Notes and Reflections'), to reinstate these agents in the position from which they had elapsed by an unjust neglect, specially pointed out their value, on various grounds, in such states.

"My own views, however, are not the mere '*line upon line, and precept upon precept*,' the due enforcement of which, in teaching an art like medicine, would excuse the want of all originality. On the contrary, approaching this important therapeutic subject by a perfectly distinct path, I have been led to a theory and a practice quite as distinct from that of the older authorities, though by no means incompatible with it.

"In studying the act of vomiting some ten years ago, I made some experiments ('The Lancet,' 1853, "On the Treatment of Fever," and 'Cyclopædia of Anatomy,' article "Stomach") which justified the conclusion, that in the vomiting of certain drugs from the stomach, there was incidentally a specific determination of these drugs to the gastric and adjacent intestinal mucous membrane; by virtue of which afflux the vomiting they provoked had the object and effect of removing them from the system.

"Extending this conclusion to the study of typhoid and other fevers, of which then and soon after I was treating numerous (about 100) cases of an almost epidemic character, I was led to recognise, in the earlier symptoms of the malady, a specific determination of the feverous poison to the great alimentary tract of mucous membrane; and especially to the upper part, as represented by the stomach. And as a corollary to this view, it seemed worth while to try the effect of agents which, like emetics, seemed, from my own researches, to determine an increased afflux of blood to this mucous membrane, as well as an increased secretion, and even excretion, from it.

"In plain English, however dangerous the facility of such a merely humoral theory in general, there seemed to be special physiological reasons for its validity in this instance. On the other hand, trained by the watching of large epidemics, I believed myself little likely to mistake for fever any febricula or slighter malady; and could see no possible harm in repeating, artificially, an act which I had felt, in my own person, gave some temporary relief to the terrible symptoms which usher in a typhoid fever.

"Without troubling you with the details by which I had slowly to convince myself that this measure was really successful, I venture to sum up their results:

"1. Emetics, early in fever, are most advantageous; with proper precautions, always harmless; in most instances, extremely beneficial; in some cases, positively cutting short the malady by a speedy cure.

"2. They ought only to be given in an early stage, for which we may generally find an arbitrary limit in the first four days from that of the inaugural rigors, but which is practically better defined by the access and duration of the nausea or vomiting of this epoch.

"3. Later than this period, they seem to have much less influence. Indeed, in many cases, it may be doubted whether they have any effect at all. While, on the other hand, the purging they often cause—a purging itself also decidedly useful in the outset of the malady—obscures the symptoms subsequently requiring to be recognised and treated, by its resemblance to that diarrhœa (of intestinal lesion) which systematically occurs in typhoid fever, and to that diarrhœa incidental to typhus.

"4. Ipecacuan seems, on all grounds, the best emetic; and the wine, in ounce or two-ounce doses, the best preparation. Warm water should be plentifully taken to facilitate its action.

"5. Once or twice a day for three or four days is the greatest number and frequency of vomitings I have found it advisable to induce.

"These are the general claims of the emetic procedure. Let me remind you however, to check them by some cautions and doubts. It would be wrong to receive and endorse the suggestions of even scientific medicine on terms such as would secure acceptance for the outrageous nonsense of homœopathy or any other quackery.

"'*Were these really cases of fever?*' On this point it may be added, to the mere assertions of myself and other eye-witnesses, that not only was no characteristic wanting, but that some of the cases most successfully arrested were examples of unusual severity, occurring in circumstances permitting no doubt; cases from a whole family struck down simultaneously, or acquired by a traceable contagion.

"'*Are such cures intrinsically probable?*' When, like Professor Gullaway's pills, any remedies are asserted to cure *all* diseases with the same rapidity and certainty, the mildest of critics may be pardoned a doubt. And, conversely, the very failures of emetics are confirmations of their efficacy, by bringing their action under laws such as few of our best remedies quite interrupt or suspend. Emetics cure in the early, not in the late, stage; cure when they help and imitate, not when they thwart and oppose, the processes of nature; cure the young more easily than the old; and lastly, reduce the fever far more frequently than they absolutely cut it short, to something which, to vary the proverb, though it 'can't be cured,' *may* 'be endured.' Sometimes, indeed, after this imperfect cure, you can trace a kind of dwarfed or rudimentary counterpart of every subsequent stage of the fever; the malady being scarcely shorter than usual in point of absolute time, save in the complete ablation (so to speak) of the whole period of convalescence. The patient lies in bed, with a pulse of 80 or 90; cheerful, but weak; asking to get up, but content to obey the prohibition to do so; requiring some food, but no stimulants, and scarcely more medicine; perhaps getting a little gentle diarrhœa—itself best left without special treatment—just enough to show that he *has* bowels, and that the malady has touched them. Between the

fifteenth and twentieth days, however, he quietly rises from his bed, recovered.

"The case of our patient discharged to-day shall be the pennyworth of bread to this intolerable deal of sack. A healthy lad of fourteen, he was sent in from a reformatory on the third day of unmistakeable typhoid, with the face, tongue, pulse (130 per minute), and every other symptom of this disease, in its worst form. He was vomited freely for two days in succession, during which he was somewhat purged by the ipecacuanha also. On the third day after his admission, his pulse, which had dropped steadily, had fallen to 72 per minute. On the fifth day, his tongue peeled. The half diet and diaphoretics he has hitherto taken were now exchanged for full diet and quinine. To-morrow, the twelfth day from his admission, and the fifteenth of his fever, he goes out, I think we may say, *cured*—certainly recovered."

ART. 19.—*On the use of stimulants in the treatment of Continued Fever.* By Dr. TWEEDIE, Physician to the London Fever Hospital, &c.

(*Lancet*, June 16, 1860.)

Speaking upon this subject in his recent Lumleian lectures before the Royal College of Physicians, Dr. Tweedie says:

"It is always necessary to watch the effects of the first few doses of wine, and if the pulse abates in frequency, becomes soft and fuller, the tongue moist, and the heat of the skin not increased; and, when there has been delirium, if the patient becomes more calm, and has intervals of sleep, we may feel sure that the wine is doing good. On the other hand, if the pulse increase in frequency and strength, the skin become hotter, and the patient restless, flushed, and excited, with throbbing of the temporal and carotid arteries, we may conclude either that wine is not suited to the case, or has been given too early, and should therefore be withdrawn. But, as a general rule, it is perhaps better to give wine a little too early than a little too late, since, if it appear to disagree, it is easy to suspend its use; but it may be very difficult to restore the vital powers if they have been allowed to remain too long unsupported.

"Nor should the wine or brandy be discontinued until convalescence is fairly established; but as the symptoms for which the stimulants have been prescribed disappear, the quantity should be gradually abridged by giving smaller portions and at more distant intervals.

"In regard to the amount of wine and alcoholic stimulants that may be administered in typhus, no precise rules can be laid down, as the ever-varying circumstances presented by individual cases can alone determine this. It is prudent to begin with half an ounce or an ounce, and to repeat this amount at longer or shorter intervals, according to the effect produced. From six to twelve ounces may be considered to be an average daily allowance, but sometimes it is necessary to give two or three pints, or even more in twenty-four hours, and, it is surprising to observe, without the slightest intoxicating effect, even when the patient has been previously unaccustomed to

stimulants. Indeed, in low fevers, the exhausted state of the nervous system appears to be antidote to the effects of stimulants—in short, to create a tolerance of wine and diffusible stimulants.

"The wine should always be conjoined with nourishment, in order to assist its due assimilation, though in many cases the digestive powers are so feeble that they are unable to elaborate even the lightest articles of food, and therefore the wine or brandy may be given simply diluted with water.

"I have just alluded to the daily quantity of wine that it may be necessary to prescribe in typhus, and stated that no precise rules can be laid down, as the circumstances of each case must determine it. You are doubtless aware that there is a great tendency in the present day to revive the Brownonian system, which flourished for a time in the latter part of the last century, in all acute diseases, including fevers, without regard to individual peculiarities. The doctrine inculcated by some teachers with respect to inflammation is, that this process being a deranged nutrition, involving supply and waste, and the waste being considerable while the inflammatory process lasts, there must be a compensating supply; that as the supplies for the formation of the abnormal products of pus and lymph must be drawn from the blood, or from the tissues, or from both, the vital powers become exhausted, in proportion to the organic disintegration that takes place. Hence it is concluded, that the more the inflammatory process draws upon the blood, the greater will be the exhaustion of vital force, and the consequent effect upon the whole frame.

"Upon this physiological theory of the phenomena of inflammation is based the overthrow of established therapeutic principles, on which the treatment has been for ages conducted. But surely even the abettors of this theoretical view must admit that the object of treatment is to anticipate or prevent those so-called destructive processes; in other words, to promote resolution by all available means. Is this to be accomplished by extravagant doses of wine and brandy, regardless of the ever-varying condition of the sufferer or period of the disease?

"Similar reasoning is adduced in regard to the phenomena of fevers, whatever be their type or special circumstances. It is against the indiscriminate employment of stimulants in fever that we protest, being convinced that their proper administration requires as much consideration as is generally bestowed on other measures employed as curative agents.

"The enormous quantities of wine and brandy recommended in even the early stage of fevers, whatever be the form, the individual circumstances, or whether there be local affections present, have often surprised me, and inclined me to doubt the accuracy of the statements. I have certainly seen intercurrent inflammations materially aggravated by the injudicious stimulation adopted, and on more than one occasion all the ordinary characters of acute delirium tremens supervene when the unlimited administration of brandy had been left to the discretion of a nurse, who fancied that she was only obeying instructions when she poured down dose after dose of pure [illegible]. There is surely no practical philosophy in such indiscrim

of a really valuable remedy when given on rational principles; and I deem it the duty of every physician who is convinced of the dangerous tendency of the Brownonian doctrine applied indiscriminately in the treatment of diseases, acute as well as chronic, to express his opinion boldly and decidedly, that the young and inexperienced practitioner may be warned of the dangerous consequences of this recently revived doctrine. * * *

"Let me also allude to the importance of giving the wine at stated intervals, and only when the excitement is moderate. It is especially necessary to give it during the night, when there is often great exhaustion. A dose of wine judiciously given at this diurnal period is often followed by calm, refreshing sleep; and hence the incalculable advantage of an interested, experienced nurse, on whom so much responsibility—indeed the life of the patient—often rests."

Art. 20.—*On the question of change of type in Fever.* By Dr. Tweedie, Physician to the London Fever Hospital, &c.

(*Lancet*, May 19, 1860.)

"If," says Dr. Tweedie, in the lectures already referred to, "we examine closely this theory as applicable to the acute diseases of the last thirty years—and this can only be undertaken by those who have witnessed and studied their type during the period referred to—and weigh dispassionately the evidence adduced, more especially by nature herself, I apprehend that the true explanation of the difference of treatment will be found to consist in the more cautious or restricted notions now entertained as to the necessity for the heroic remedies formerly so freely, and I may say indiscriminately, adopted. Even those who are in favour of this doctrine cannot assert that the pathological phenomena of acute diseases have undergone a change, for the symptoms, general and local, and all the essential morbid processes of the entire class of pyrexial diseases, have not undergone the slightest alteration; and if the evidence as to the depressed or asthenic condition of the vital powers be scrutinised, I have a strong impression that the conclusions adopted, more especially in reference to fevers as a class, are not warranted by facts. And how important is it to form a correct judgment of this doctrine, since it determines the line of treatment to be pursued, and may even involve the safety of many valuable lives!

"The subject has not escaped my attention, and I have come to the conclusion that though certain cyclical differences in acute diseases, of longer or shorter duration, may have been occasionally detected, the notion of change of type, as regards the various forms of fever, has been greatly exaggerated.

"Let me state the grounds upon which I have come to this conclusion, which I admit is at variance with the ideas of many physicians whose knowledge and judgment entitle them to great consideration.

"We find that Sydenham, who is considered to be the author of this change-of-type theory, cautioned the medical men of his day against too hastily determining the treatment of a new epidemic—

until, in short, the practitioner and the disease were better acquainted —on the reasonable ground that epidemics assumed at one time a more acute or phlogistic, at another a less acute or asthenic, character; but we do not find that he had observed a change in one direction only, and for so lengthened a period as considerably more than a quarter of a century. If the records of epidemics of other varieties of fever be examined—the eruptive, for example—it will be evident that, during the same period (in smallpox, measles, and scarlet fever) every variety or modification of type has been observed, the type being sometimes acute, sometimes more or less asthenic, and requiring, consequently, variation in treatment.

"I apprehend that the true explanation will be found in the fact that, until very recently, little or no attention has been paid to the ever-varying differences in form which fever assumes—at one time typhus, at another enteric or typhoid, or it may be relapsing fever, constituting the features of the prevalent fever, though it should be kept in view that, whatever be the character or type of an epidemic, individual differences arise, according to the peculiar circumstances in which a single individual, or a number of persons, or a community, may be accidentally placed. The question of the identity or non-identity of the several forms of continued fevers thus becomes of the greatest importance in relation to the change-of-type theory. For example, the great argument adduced by those who support the doctrine is, the decided results in the Edinburgh epidemic of 1817-20 —and which I had the opportunity of witnessing—of the large indiscriminate bleedings in diminishing the mortality. This argument, however, loses much of its intended effect when it is considered that by much the larger number of cases consisted of relapsing fever—a form the mortality from which has already been shown to be exceedingly small under any kind of treatment; and that the death-rate has been even less when no blood was abstracted at all. As in other epidemics, the mildness or severity of this fever has varied at different times. We are told, somewhat exultingly, that under the unnecessarily profuse phlebotomy practised in 1817-20 the mortality did not exceed 1 in 22 at any period of the disease, and was reduced so low as 1 in 30 as the epidemic spread; but in the argument it has been overlooked that the mortality of this fever is liable to much variation. For example, in the epidemic of 1843, the history of which has been given by Dr. Cormack, the deaths were 1 in 16; of the cases recorded by Dr. Wardell (1843-4), it was 1 in 20; and of 203 cases treated in the Edinburgh Infirmary in 1848-9, there were only 8 deaths; and if we extend our inquiries to other places, we find that of 7804 cases of relapsing fever admitted into the Glasgow Infirmary between the years 1843 and 1853, the deaths were 405, or about 5 per cent.; and in the London Fever Hospital, of 441 cases admitted during ten years (1848 to 1857), 11 died, or in the ratio of about 1 in 40.

"This variation in the mortality could not be ascribed to the remedies employed; for Dr. Cormack states that, having been urged by medical friends to test the effects of bloodletting, he instituted trials of this remedy, but candidly admitted that, though the symptoms were sometimes evidently relieved, the beneficial changes were often not

effects but sequences of the bleeding, as was satisfactorily proved by the very same changes frequently occurring as suddenly and unequivocally in patients in the same wards, and affected in the same way, *who were subjected to no treatment whatever*. And in regard to the treatment instituted at the London Fever Hospital, when the mortality of relapsing fever did not exceed one in forty, with scarcely an exception, no blood was abstracted at any period of the disease.

"It is clear, therefore, that the change-of-type theory cannot rest on comparison of the treatment by indiscriminate phlebotomy formerly practised, when all acute diseases, including fevers, were supposed to be under the dominion of the lancet.

"But though the grounds on which the question has been argued are, in my opinion, erroneous, one good result has followed in the death-blow which the practice of indiscriminate phlebotomy, formerly adopted in all acute maladies, has received; for too often little or no regard was paid to individual peculiarities, or even to the stage of the disease for which the bleeding was employed. The inquiry was simply as to the existence of fever or of inflammation; and, the question once settled, the lancet was unsheathed, and much blood unnecessarily shed, and from the effects of which the patient did not recover perhaps for months. But, on the other hand, there is great hazard of many important diseases being allowed to gain the ascendancy from the indecision that has resulted from the complete alteration of therapeutic principles which the discussion of this question has brought about. My own experience tells me that I have witnessed the same good effects from moderate abstraction of blood in some forms of acute disease—occasionally even in the early stage of enteric fever—as in bygone days. I have not observed that loose condition of the crassamentum of the blood, nor the absence of the buffy coat so characteristic of low vitality, but I have been careful in the selection of cases as well as of the period of the disease before resorting to bloodletting; and I am satisfied that, with this precaution, there will in general be little regret that this remedy, powerful for good or for evil, has been had recourse to. It is, however, consoling to observe, that in the present day there is a more just appreciation of the powers of curative agents, as well as of the principles on which they should be applied, not only in acute but in chronic diseases. This is the consequence of studying the effects of disease on individual structures, and of the efficacy or inefficacy of remedies to subdue the changes that take place when certain morbid actions have become established. We are now or ought to be satisfied, that the most scientific as well as the most successful course in many acute diseases, after a certain period, is not to interfere too much, if at all, with the operations of nature in her efforts to repair the injury parts or organs have sustained by disease."

ART. 21.—*On the treatment of Intermittent Fevers by Cinchonine in the French Army.* By. M. MICHAEL LÉVY.

(*Bull. Gén. de Ther.*, May, 1860; and *Edinburgh Medical Journal*, Oct., 1860.)

The great expense incurred in the hospitals and infirmaries of the French army by the amount of sulphate of quinine employed in the treatment of intermittent fevers, especially in Corsica and Algeria, has led, besides the extension of prophylactic measures, to the endeavour to obtain substitutes for the quinine. After various proposals, which have met only with indifferent success, the salt of cinchonine has been more recently experimented on with more satisfactory results in the hospitals of Algiers, Oran, Constantinople, Cherchell, Rome, and La Rochelle. The reports of the chief medical officers of these establishments, which have been published, by order of the Minister of War, in the 'Recueil of Military Medicine, Surgery, and Pharmacy,' for 1859, afford the following interesting data. There was a total of 205 fevers, of which 106 were first attacks and 99 relapses; the number of cures amounted to 194; the sulphate of cinchonine failed 11 times. Out of 115 of these cases, which had been carefully observed, 11, which had resisted the sulphate of cinchonine, were distributed as follows: 9 out of 58 treated at Oran; 2 out of 6 treated at Rome. In 19 cases, the first dose had arrested the fever; 37 had one attack during the treatment; 16 had two attacks; 12 had three; 2 had four; 2 five attacks, &c. From these reports it further appears that the association of the sulphates of quinine and of cinchonine neither increased nor diminished the individual power of each. In the various trials the toxic effects of the cinchonine were well marked; in the digestive system, nausea, gastralgia, vomiting, colic, diarrhœa (some of which symptoms, however, may have been due to the fever rather than to the drug); in the nervous system, general excitement, headache, vertigo, intoxication, noise in the ears, deafness, disorders of vision, nervous tremors. But although the toxic effects were fully equal to those of the sulphate of quinine, the therapeutic effects were much inferior (3 : 10).

In 1856, at the suggestion of M. Soubeiran, a series of experiments was made at Blidah by M. Laveran, principal medical officer there, on the comparative effects of the sulphate of cinchonine and of quinium, the results of which were published in the 'Gazette Médicale.' M. Laveran divided his observations into four parallel series, according as the fevers were treated—1st, by expectation; 2d, by sulphate of quinine; 3d, by sulphate of cinchonine; 4th, by quinium. He directed his attention not only to the attacks of fever, but also to the accompanying disorders, the earthy hue of the skin, the enlargement of the spleen, and dropsies; and, to make the comparison more exact, he employed the same quantity of cinchonine and of quinine, instead of using larger doses of the former, as most military physicians do. The general results were, that patients who, before admission to hospital, had suffered 5 attacks, had, on an average, with the quinine treatment, 1·30 attacks in the hospital; with the treatment by

cinchonine, 2 attacks. Patients who had been the subjects of 6 attacks before admission, gave the average, under quinine, of 0·70; under cinchonine, 1·70 attacks. The cinchonine appeared less efficacious in proportion as the fevers were more recent and more intense. According to M. Laveran, neither the quinine nor the cinchonine had any effect on the engorgement of the spleen.

The observations made under the direction of M. Michel Levy in the hospitals of the East, in the campagn of 1854, were postponed from the summer to the autumn season, in consequence of the violent epidemic of cholera which broke out at the Piræus, Gallipoli, and Varna. The experiments with the cinchonine were begun, however, in September, in the hospital of the Piræus, under the immediate charge of M. Artigues, and in that of Varna under M. Barby. In the hospital of the Piræus the experiments took place in September and October, 1854. The medicine was administered only in presence of the physician, and after one or two paroxysms had been observed. A solution was used of about four grains to three drachms of water. It was intended to experiment only on cases free from complication, but this was found impossible from the previous bad health of the troops during the summer. Thirty-five fever patients took sulphate of cinchonine; of these, 9 were affected with regular intermittent fever, 8 remittent fever; 5 had fever of an irregular type, and 3 continued fever of a typhoid form. *Regular intermittent fever*,—Out of 9 cases of quotidian, 7 were first attacks, 2 relapses; 7 were simple fevers, 2 complicated, one with bilious symptoms, the other with acute bronchitis. The dose of cinchonine was eight to twelve grains; 7 cases yielded to the first dose, 2 required a second. *Bilious and inflammatory remittent fever*,—The dose was fifteen grains. Seven times out of eight the attack was cut short or diminished by the first dose, and the cure was complete after three doses. In 8 patients the convalescence was fairly established from the seventh to the eighth day. These, however, still suffered from headache and languor, and only slowly recovered their strength. The mean duration of the treatment was thirteen days, and there was no relapse. The medicine was not equally well borne by all the patients: 3 had vomiting; in 2 a diarrhœa of short duration came on; and twice there were noted dazzling of the sight, vertigo, violent headache, and extreme weakness, symptoms which disappeared as soon as the medicine was suspended. *Irregular intermittent fever*,—Five cases cured. M. Artigues introduces into this group two cases of paludal cachexia, in which the cinchonine was of the same service as sulphate of quinine. *Typhoid continued fever*,—Only one case. The sulphate of cinchonine had no effect, and as the case tended to become malignant, no time was lost in administering the sulphate of quinine, which produced a "heroic" effect. In the hospital at Varna, M. Barby subjected at the same time one series of patients to the quinine, and another series to the cinchonine treatment. He gave double the dose of cinchonine that he did of quinine, administering it during the intermittence, eight or ten hours before an attack, and taking care to observe, previous to using it, that the attacks of fever were either increasing in intensity, or at least showed no tendency to spontaneous decline in violence or dura-

tion. The cinchonine was administered only after the fourth or sixth attack had been observed. Forty patients took the sulphate of cinchonine; but at the time of M. Barby's report only 22 had been observed to their conclusion. Of these there were 10 regular intermittents, including 8 quotidian and 2 tertian; 1 irregular intermittent; 9 remittent, including 6 quotidian, 1 tertian, and 2 typhoid; besides 2 cases of sub-continued fever. Nearly all the patients had voluminous spleens, and had been previously attacked with fever once or oftener. On an average, each patient took one drachm one scruple of sulphate of cinchonine; the minimum was two scruples, the maximum three drachms. *Intermittent fevers,*—The first dose arrested the fever in 3 cases out of 11, the second dose in 4, the third dose in 2 cases. The first dose sensibly diminished the following paroxysm, where it did not entirely prevent it. The two remaining cases required four doses of cinchonine. In these cases the pulse fell in three days successively to 55, 50, 48, and 45 pulsations, which was the inferior limit of frequency. The headaches disappeared completely, and the splenic dulness was, in some cases, reduced in extent. There was only one slight relapse. *Remittent and sub-continued fevers,*—In 9 cases the first dose was only followed by a diminution in the intensity of the febrile phenomena; but the cure was not more slow than with sulphate of quinine. The same effects were observed in the *typhoid intermittent fevers.* And in some cases of the paludal cachexia, not included in these returns, M. Barby ascertained the favorable effects of the sulphate of cinchonine, which were observable at the end of a few days.

These observations, when compared with those made by other medical officers at various stations, present very considerable differences in their results, which may be due to the different climates where the experiments were made, the effects of the season, the vernal fevers being treated by some observers, the autumnal by others, &c. But if all the elements of the problem cannot be decided, yet there seems to M. Levy sufficient evidence on which to found the following conclusions—1st. Expectant treatment is not attended by serious inconvenience in simple intermittent fever, under proper hygienic conditions; it is to some extent indispensable in testing experimentally the substitutes for quinine. 2d. Part of the successful cases, ascribed to cinchonine as well as other febrifuges, are due to the well-known fact of the spontaneous decline of febrile attacks. Speedy cures, previous to the occurrence of an attack in hospital, and those of vernal fevers, belong to this category. 3d. The fevers of summer and autumn, although more obstinate than those of spring, present a certain proportion of spontaneous cures. Such were a part of those in the Piræus in September, 1854, cured by a single dose of eight to twelve grains of sulphate of cinchonine; and probably the fever treated with apparent success, by means of salicine, at the hospital of Calvi, in Corsica, in 1835, were in reality spontaneous recoveries. 4th. If in malarious countries, such as Corsica, Algeria, the Piræus, and Varna, where the miasmatic effluvium is at the maximum, a large number of the fevers get well spontaneously, the proportion of cases must be much more considerable in temperate climates, such as Paris and other towns of the interior of France, where the paludal influence

is much less marked and often very weak. At the military hospital of Lille, the venerable Physician-in-Chief, M. de Chamberet, used to cure intermittent fevers with pure water, distributed to the soldiers in vials, labelled with *Protoxide of Hydrogen!* 5th. The outlay for sulphate of quinine may, in accordance with the preceding remarks, be considerably reduced both in civil hospitals and in the army; the sulphate of cinchonine will be sufficient in the treatment of most fevers which occur in spring and up till the beginning of June, and even in a certain number of cases in summer and autumn. In winter, when there are only relapses, without any tendency to the malignant type, the same treatment will do, whether preceded or not by a dose of the sulphate of quinine, or mixed with a small quantity of the latter, as advised by the Council of Health for the Army. 6th. No military physician has attempted the employment of cinchonine in the malignant fevers (fièvres pernicieuses); a reserve which is recommended by the results of experiments, and which ought to be imitated in civil practice. 7th. Another source of economy consists in a rational *dosing* of the drug; excessive quantities being used both in Africa and in France. Impartial observation has shown that, even in malarious countries, it is rarely necessary to raise the dose above twelve to eighteen grains. 8th. Lastly, the expense for sulphate of quinine to remedy splenic engorgement is, in most cases, sheer waste. In recent cases the treatment may be of service; but in tumours of the spleen of long standing, the quinine lavished with costly perseverance is found to produce no sensible modification of the enlargement. In conclusion, M. Levy refers to the fact, insisted on by the Council of Health of the Army, that there is a singular contrast between the toxical energy of the cinchonine and its therapeutic insufficiency—a subject which deserves renewed research. In the administration of cinchona, the toxical and therapeutic effects of the cinchonine are combined with those of the quinine, and the sum of their actions forms the peculiar value of the cinchona. And if the sulphate of quinine is the resource of the physician in combating fevers, which resist the action of the sulphate of cinchonine, so also, then, are fevers which repel the sulphate of quinine, but yield to cinchona. In fevers which have frequently relapsed, and in those which have induced a cachectic condition of the system, it is the cinchona which deserves the preference.

ART. 22.—*The conditions attending every attack of Acute Rheumatism.* By Dr. WHEELOCK, of Belfast, Maine.

(*Amer. Med. Monthly*, Aug., 1860.)

An experience of twenty years, we are told, has convinced the author, that every access of acute articular rheumatism is immediately preceded by a special condition of the nervous system, induced by mental anxiety or by the action of the depressing passions; and that if, when the body is in this condition, a suppression of the sensible or insensible perspiration having taken place, the result is invariably acute rheumatism. "This truth," Dr. Wheelock naively adds, "though

a simple one, is, to my mind, startling, and, without egotism, the most important pathological discovery in the present century."

Reference is made to fifty cases of acute rheumatism as supporting this view, and a dozen of these is given in illustration, which can scarcely be regarded as altogether conclusive, seeing that few human beings suffering from any malady will not present some traces of the action of mental anxiety or depressing passion, if such traces be sought after.

This view, according to Dr. Wheelock, suggests an additional indication of treatment. "It is to bring into operation the requisite moral influences. The patient is to be made to understand the true nature of the disease and its cause. Though it cannot be expected that every individual shall exercise the force necessary to the forgetting or ignoring mental agitations in these cases, yet it may be presumable that a knowledge of the real producing cause may not only prevent a recurrence of it, but will greatly assist in fortifying the sufferer against its protracted continuance. In my own experience, I have found, when patients are informed that it has been brought on themselves by a mental agitation that might seem to have been avoided or was inexcusable and needless, the disease has been shortened in its course or immediately stopped; and where there had been successive attacks, the patients had thus been apparently spared these recurrences."

ART. 23.—*On the therapeutical methods of preventing pitting of the face in Smallpox.* By Dr. STOKES.

(*Dublin Quarterly Journal of Medical Science*, Feb., 1860.)

During the last four or five years, Dr. Stokes has employed gutta percha and collodion, in a considerable number of cases of confluent smallpox, for the purpose of preventing pitting of the face. In most of the cases the crust came off in large flakes or patches, composed of the dried exudations and the covering material, leaving the skin uninjured. This kind of treatment was most successful in cases of a typhoid character, but appeared to be not so well adapted to those presenting a more sthenic type. Dr. Stokes considers that the application of poultices over the face is the surest method of preventing disfigurement in smallpox. Their use should be commenced at the earliest period, and continued to an advanced stage of the disease. In most cases they may be applied even over the nose, so as to cover the nostrils. The plan should fulfil three important indications of treatment—namely, to exclude air, to moderate the local irritation, and to keep the parts in a permanently moist state, so as to prevent the drying and hardening of the scabs. The best poultice is formed of linseed meal, which should be spread on a soft material, such as French wadding, and covered with gutta-percha paper or oiled silk. The conclusions to which Dr. Stokes arrives are the following: 1. That the chances of marking are much greater in the sthenic or inflammatory than in the asthenic or typhoid confluent smallpox. 2. That, considering the change in the character of disease observed during late years, we may explain the greater frequency of marking

in former times. 3. That in the typhoid forms of the disease the treatment of the surface by an artificial covering, such as gutta percha or glycerine, will often prove satisfactory. 4. That in the more active or non-typhoid forms the use of constant poulticing, and of every other method which will lessen local inflammation, seems to be the best mode of preventing disfigurement of the face.

(c) CHRONIC DISEASES.

ART. 24.—*Remarks on the Scrofulous Conformation or Diathesis, based principally on the study of the skeleton.* By Dr. HAKE.

(*Proceedings of the Royal Med. and Chir. Society*, April 10, 1860.)

Scrofula may be regarded as one of the oldest diseases on record, and as having affected mankind from a period prior to history. But the chief interest of its antiquity resides in its alliance, as a disease, with a peculiar conformation of body, or diathesis, the anatomical characters of which, duly considered, belong to race, and, in fact, constitute it a variety of man. This conformation, distinct from the disease, has only been described by modern writers. Its features penetrate every system of organs, and are far more numerous than its literary history would lead us to suppose. It is the hereditary element on which scrofula, tuberculosis, and rickets are engrafted, and it was his purpose to trace its embryological and ethnological relations.

The characters of the scrofulous type of conformation refer as observed by previous writers, to the shape of the cranium, the jaws, the limbs, and to the symmetry and growth of the body in general. But these characters, observed without any guiding principle, afford a superficial view only, and convey, in some instances, a contradictory one of the conformation in question.

Origin of the scrofulous conformation.—By means of an extensive comparison of anatomical elements, it has been found that while several of these and other characters are abnormal in relation to the European, or so-called Caucasian, they are distinctive of the inferior races; that all these characters are discoverable in the fœtus or the child; that, as a rule, the features of the scrofulous conformation, and of the inferior varieties of mankind, exist normally in the embryonic and infantile structures of the European, or higher type of man.

Definition of terms, and their application.—The terms strumous and scrofulous are so deeply associated with morbid characters as to be inadequate to convey a correct idea of many of the facts adduced in this paper. It would not satisfy the requirements of correct definition to say that a gray or blue eye belonged to the scrofulous group of structures, while every other part was well developed; yet such a feature is of the same class of phenomena as rickets: in the one, the deposit of dark pigment is arrested; in the other, phosphate of lime —both belong to the same early type.

To express the immature organization which accompanies tuber-

culosis, scrofula, and rickets, but which frequently exists without either of these being present, the term sporagenetous is employed by the author; it embraces immature characters, under whatever circumstances they may arise, whether in the healthy or strumous habit, or amongst the inferior races.

The following propositions are then stated by the author as the conclusions at which he had arrived, and illustrated at full length by tables and reports:

1. A resemblance is to be found between the characters of the head and pelvis of the so-called scrofulous conformation, and of the same parts in the lower races of mankind. This is especially true of the cranium and pelvis, less so of the long bones.

2. Want of resemblance in the special characters of the limbs of a scrofulous type of conformation, and of the lower races, excepting those of gigantic or dwarfish stature, limits the inquiry ethnologically; but the general features of both have their prototype in the fœtus. On a careful study of the long bones characterised by stunted growth, and by excessive growth, they have been found to be marked by deviations from the normal type, but these peculiarities proved to be normal in the later embryo and child.

3. The anatomical conformation of the *scrofulous type*, thus due to the persistence through life of *certain fœtal peculiarities, is liable* to become the seat of strumous disease. This proposition is borne out by the circumstance that various forms of strumous disease, hereafter enumerated, are found in bones in which the fœtal characters are clearly defined. The same remark applies to rickety bones.

4. Comparison of the cranium and long bones of an adult of the scrofulous type with those of the fœtus and child, displays their common characters. During the period of intra-uterine life, and afterwards, the cranium is large in proportion to the other parts of the skeleton; the frontal portion is low and narrow; the sides are compressed, widening towards the posterior part, which is large; while the antero-posterior diameter greatly exceeds the lateral at its broadest line. These characters gradually give way after birth to those of the Caucasian type, except in such children as inherit the the scrofulous diathesis, in whom they persist throughout life. The long bones, during intra-uterine life, except in the first few weeks, have the form of a double truncated cone joined at their apices. This form continued in some degree during childhood, with a gradual approach to the mature form. But in the subjects of strumous disease, or rickets, the fœtal characters are more or less preserved.

5. The scrofulous and inferior types of man differ respectively from the higher type only to the extent to which they agree with the fœtus, as relates to the osseous system in particular.

6. The crania of the fœtal series (oval type*) and those of the adult inferior varieties of man correspond, by admeasurement, in their relative diameters. The cranium of the adult Ethiopian and Mongolian finds its parallel constantly in the European fœtus. The average length and breadth of the first is as 1·36 to 1; of the second, as 1·15 or 1·20 to 1.

* Caucasian.

7. The pelvis of the fœtus has characters which agree with those of rickety subjects in the same structure, and with those of certain adult varieties of man. The pelvis is oblong, in a direction from the symphysis pubis to the sacrum, in the European fœtus, also in the male negro, the New Hollander, the male and female Buschisman, the male Polynesian. (Hunterian Collection.) It is oblong in the European child also, but its transverse diameter becomes the greater at maturity in the latter. In the fœtus, the negro (St. Bartholomew's Museum), and in others of the lower races; in the rickety subject, as well as in the mammalia of the lower series, with few exceptions, the obturator foramen is oval; in the European, at maturity, it is almost triangular. In the fœtus, the dwarf, the female Buschisman, &c., the ilia are upright; in the adult European they are expanded and hollowed. The elongated sacrum observable in the fœtus is noticeable as an inferior type in the dwarf, and in the New Zealander from the Isle of Pines. (Hunterian Collection).

8. It is of importance to establish fixed characters, by means of which the diagnosis of strumous diseases may be effected.

9. An illustration is derived from the predominance of the organic over the earthy constituents of bone, as characteristic both of rickets and of the osseous system in the embryo.

10. Mollities ossium from fatty degeneration is a form of struma accompanied by embryonic characters. In this disease the neck of the femur, instead of rising boldly at an obtuse angle from the shaft, ascends at one of 95°, or thereabouts, as in rickets—a feature characteristic of the sporagenetous type, and of the mammalian series, to a great extent.

11. In congenital hydrocephalus the albuminous membrane forming the cranium does not everywhere advance to the osseous state, thus showing the persistence of a fœtal character.

12. There is an antagonism of the ends and shafts of long bones. The fœtal skeleton is typical of the scrofulous conformation of bones. Taking the femur as an example, the characters of that bone have been minutely observed and compared in the fœtus, the healthy adult of the European, the different lower races, and the scrofulous type of conformation. During the early weeks the femur represents a shaft without enlarged ends—a mammalian type, principally of the lower quadrumana. The ends progressively enlarge; their transverse diameter increases in a greater ratio than that of the shaft up to birth, when the ratio of the lower end to the shaft is about three to one. Development then takes a new direction, that of transforming the fœtal into mature characters. This consists in the formation of the lines and surfaces of the condyles, of the neck and head of the bone. In exceptional cases, the increasing ratio proceeds, and the development is interrupted or completely checked. This is noticeable in deformed fœtal skeletons, in rickets, and in the sporagenetous type at large. In rickets, if the end of the bone bears a greater proportion to the shaft than is normal, it is because the latter has not reached its maturity. The shaft of long bones in rickets, and likewise in congenital hydrocephalus, which is the same affection, is not only diminished in length, but in its true diameter, taken at right angles with the direction of

its curvature, if distorted, and in the ordinary way if straight, as it often is in hydrocephalic cases. Thus no morbid character is discernible in rickets; if a disease, it is one only of misplaced natural conditions, and belongs to the anomalies of the organization. Thus viewed, it may, and probably always does, commence in the fœtus; nor is the accidental occurrence of curvature necessary to show that it is present. The proportion of the lower end of the femur to the centre of the shaft is fœtal when it falls below 3·1 in relative diameter; it is normal when such ratio subsists. When this occurs at the same time that the shaft and end have surpassed their normal diameters, the limb approaches giantism in these respects, and may present its truest example.

13. There is an abnormal antagonism of the ends and shaft of long bones in rickets. Eighteen examples of rickets have been measured, and divided into two groups—the first comprising the femora of such as have preserved the proportions of a fœtal type through life; the second of such as have the character of excessive development of the ends in relation to the shaft. In four examples of the first, the shaft exceeds the normal diameter; while in every instance save one the end falls below it. In every example of the second, the shaft is below the normal diameter, and, except in one instance, the end also. In the first group, the ratio of the end to the shaft varies from 1·8 : 1 to 2·9 : 1; in the second group, from 3·1 : 1 to 5·2 : 1.

14. The formation of parts, like the cranium, being consentaneous with the growth of the central organ, expresses its outline; but that of independent parts, like the femur, is subject only to its own law of development, and when arrested in its passage to maturity, affords the simplest exponent of the constitution of early life, of which the strumous diathesis consists.

15. The fœtal cranium, during the early weeks of embryonic life, has a conformation approaching to that of the Ethiopian type; at the twelfth week, or thereabouts, to the Mongolian; it afterwards attains by degrees to that of the Caucasian, and it is, for the most part, amongst the rudimentary forms of this latter that the scrofulous conformation is to be identified after birth.

16. The pelvis of Europeans is often marked by characters not found in those of the true oval type, but discoverable in the fœtus and lower races. The oblong pelvis is of this character; it is a feature of the sporagenetous type. It is found in the Ethiopian; amongst Europeans it is abnormal, except in the fœtus and the child. The round, or oval, obturator foramen, is a leading character of the sporagenetous group. It is found in rickety skeletons, in some of the inferior races, and throughout the mammalian series, with very few exceptions. In the human fœtus this opening is constantly oval; in the adult European it is somewhat triangular.

17. The thorax of sporagenetous subjects is distinguished by characters which are discoverable in the fœtus. The ribs in rickety subjects are dwarfish in length, but their ends are large, as in the embryo. Their shortness narrows the chest, and throws the sternum forward; a state similar to that which is present at birth. The ossification of the sternum is often not complete.

18. The spinal column of the same class of subjects is marked by fœtal characters. Spina bifida (and the acephalous and anencephalous state associated with it) must be regarded as rachitic; a view confirmed by the conformation of the femur. The sacrum is oblong in this class.

19. The jaws and the teeth are marked by characters of a fœtal type in subjects of the scrofulous conformation. The jaws are frequently prognathous in strumous habits; the teeth project, and are with difficulty covered by the lips. In an anencephalous fœtus in Guy's Museum the muzzle is prognathous.

20. The natural classification of scrofulous diseases affecting the osseous system (osteo-struma) is based on their common origin in bones of a sporagenetous type. Many examples of bone which were the seat of morbid or abnormal changes have been examined. The following conditions have been found in bones that were characterised by the absence of well-developed traits: 1, rickets; 2, enlargement of bone; 3, concentric atrophy of bone; 4, fatty degeneration of bone; 5, enlargement of the medullary cavity of bone; 6, dryness of osseous tissue and lightness of weight; 7, growth of compact tissue external to the walls of bone; 8, osseous tumour with different proportions of cancellous and compact tissue; 9, deposit of compact tissue in the concavity of bones distorted by rickets; 10, hydrocephalus; 11, excess of oleine in bones (greasy); 12, diminution of compact tissue; 13, excess of cancellous tissue; 14, caries; 15, fracture; 16, inflammation of medullary membrane; 17, medullary tumour of bone (osteo-sarcoma); 18, ulceration of ends of bone; 19, ulceration of cartilages of bone; 20, anchylosis of bones by cancellous structure.

21. The immature parts subsisting in the midst of mature structures in the skeleton are not all of the same developmental age, but are arrested in their formation at different epochs of life.

22. The anatomical conformation on which scrofula is engrafted penetrates the organization generally. Polysarchia scrofulosa, enumerated amongst the characters of a strumous diathesis as affecting adults, is often accompanied by fatty degeneration of the heart. This abnormal disposition in the cellular tissue to produce fat (having a fatal tendency to deposit it in the place of muscle in the adult) is natural in the infant, up to the period of its second dentition especially. As the organization matures, it gives way, and its persistence is an indication of struma—of a constitution that does not ripen. It may disappear for a time; but the circumstance of its renewal supplies the proof that the tissue in which it exists retains its early character, displaying its tendency in the form of fatty liver, fatty degeneration of the bones and muscles, probably of mottled kidney, and of tubercular disease, in which margaric acid takes part. This view of the probability of an immature cellular tissue amounts almost to certainty in rickets—a condition reaching from fœtal life to manhood—during which interval the inorganic matters of bone, abundant in the blood, are not assimilated beyond their fœtal amount, but are excreted by the kidneys.

The cartilaginous form of the skeleton, its imperfect ossification,

belong to the same class of effects as alopecia connata, &c., and are proper to the scrofulous constitution.

The prolonged infancy of our species has to be taken into account in explaining the blue eye of adults. Dr. Hake had long been desirous of examining the negro fœtus in relation to these points. The opportunity has recently occurred through the courtesy of Dr. Murie, of the Hunterian Museum. He found the iris of a pale colour, grayish-blue. The hair was black, the skin of the hands and feet white, of the other parts of the body slightly tinged with brown, while that of the face was olive. There was an Ethiopian cast of feature: the nose depressed, the nostrils transverse, the lips thick, the effect being heightened by the colour of the hair and complexion. The features themselves were scarcely distinguishable in shape from those of a European fœtus of from four to six months, and in their character and type were such as are daily observable in European adults of a sporagenetous type of conformation. The dark races follow the lower mammalian type in their more rapid progress to maturity than the European.

ART. 25.—*On the Causes of Rickets.* By Dr. JENNER, Physician to University College Hospital, and to the Hospital for Sick Children.

(*Medical Times and Gazette*, May 12, 1860.)

The following remarks are taken from one of a series of three valuable lectures on rickets, delivered at the Hospital for Sick Children:—

"It is of much greater interest to the patient and to the practitioner to determine what are the circumstances which cause a child to become rickety, than it is to learn the nature of rickets. I know of no facts to prove that rickets is hereditary. The health of the mother, however, has a decided influence on the development of rickets in the child. Whatever renders her delicate, whatever depresses her powers of forming good blood, *that* tends to induce rickets in the offspring. Of the influence of the father I am very sceptical. Of this much I am sure, that where the mother is in delicate health, in a state of which anæmia and general want of power form the prominent features without being the subject of disease usually so called: there the children are often in a very decided degree rickety, and that although the father is in robust health, and the hygienic conditions in which the children are placed are most favorable. On the other hand, I know no case (though I do not deny that there may be such) in which the mother being robust, the hygienic conditions favorable, and the father delicate, the children have proved rickety.

"Phthisical parents are no more likely to have rickety children than are non-phthisical parents. Nay, the facts contained in a table made for me by my friend Dr. Edwards, some years ago resident at this Hospital, and now Physician to the Consumption Hospital at the East of London, renders it probable that they are even less likely.

"It is very common for the first, or the two or three first, born children to be free from any signs of rickets, and yet for every subsequent child to be rickety. Again, if a woman have one rickety child, in the large majority of cases all her subsequent offspring will be rickety. The explanation of this fact is that among the poor the parents are generally worse fed, worse clothed, and worse lodged, the larger the number of their children—the man's wages remain stationary, the calls on his means are increased. And among the rich and poor the larger the number of children the more has the mother's constitutional strength been taxed, and the more likely is she to have lost in general power.

"Whatever external conditions are favorable to the formation of hydræmic blood in a child seem to be favorable to the development of rickets. Impure air constantly breathed—food insufficient in quantity or defective in quality taken daily—deficient light—want of cleanliness.

"Whatever ailments interfere with nutrition, and so with the formation of good blood. Deranged conditions of the digestive organs—diarrhœa—attacks of local inflammation, especially if neglected or if treated by excess in bloodletting, mercury, or antimony. Active treatment is sometimes necessary to save a child's life; but be careful, I pray you, how you employ active depleting remedies in children—you may cure the disease for which you administer your agents, but you may at the same time kill the child by the injuries inflicted on its general powers. And with reference to mercury, I would advise you to have your gray-powder bottles marked *Dangerous, especially in alterative doses.* I do not mean that such are never given with advantage; but I do mean that where they are once given wisely they are many times given to the injury of the child's health.

"The frequency of rickets among the poor is no doubt partly the result of the improper food with which the children are so often dosed even from their birth. This is the common mode of rearing the children of the poor in London.

"For the first two or three days after birth their tender stomachs are deranged by brown sugar and butter, castor-oil and dill-water, gruel and starch-water; as soon as the mother's milk flows they are when awake kept constantly at the breast. And well for them if they are not again and again castor-oiled, and dill-watered, and treated with a few doses of mercurials,—for the poor have learned the omnipotent virtues of gray-powder.

"After the first month bread and water sweetened with brown sugar is given several times a day, and during the night the child is, when not too soundly asleep, constantly at the breast. As soon as the little ill-used creature can sit erect on its mother's arm it has, at the parents' meal times, 'a little of what we have'—meat, potatoes, red-herring, fried liver, bacon, pork, and even cheese and beer daily, and cakes, raw fruits, and trash of the most unwholesome quality as special treats, or as provocatives to eat when its stomach rejects its ordinary diet. Then instead of being weaned when from ten to twelve months old, the child is kept at the breast when the milk is worse than useless, to the injury of its mother's health, and to the damage of its after brothers

and sisters, in the hope that it may retard the next pregnancy. The children are sacrificed that the passions of the parents may not be restrained. Can we wonder that rickets is prevalent among the poor of London? Can we fail to wonder that geography, history, and crochet-work form so large items in the instruction imparted at our national schools, and the doctrines of life so small. Let the girls there educated be taught that Constantinople is the capital of Turkey if it be any advantage for them to know it, but let them also learn how to dress, nurse, feed, and lodge an infant, so that it may run a fair chance of not swelling the amount of that truly awful column in the Registrar-General's returns—'Deaths under one year.'

"I have told you that rickets causes, primarily or secondarily, more deaths than any other disease of childhood; from what I have said of its causes, you will have also learned that it stands very high on the list of preventable diseases.

"Dr. Merei collected some, not all very trustworthy, facts bearing on the comparative prevalence of rickets in different parts of England, Scotland, and Wales. The subject is one of very great practical interest. If you, who hereafter will practise in many parts of the country, would each pay attention to the prevalence of this disease in your own sphere of observation, and the causes that induce it, much valuable information would soon be collected, and practical conclusions readily deduced."

ART. 26.—*On the use of Sesquichloride of Iron in the treatment of Purpura Hæmorrhagia.* By M. PIZE, of Montelimart la Drôme.

(*Jour. of Pract. Med. and Surgery*, August, 1860.)

This paper, which was read before the Parisian Academy of Medicine, is divided into two entirely distinct parts; one relating to the exposition of practical facts, the other to the modus operandi of the remedy. M. Pize holds, without much show of reason, that the drug has a sedative action upon the heart; and this opinion led to a prolonged and futile discussion in the Parisian Academy of Medicine upon the action of medicines in general. The practical facts are of considerable interest.

In the first case, a girl, twelve years of age, presented for six days all the symptoms of typhoid fever, and simultaneously suffered from epistaxis, turgidity and sanguineous exudation of the gums, expectoration, emesis, sanguinolent motions and urine; numerous ecchymoses were disseminated over the surface of the limbs. This condition had persisted for a whole week, in spite of sulphuric acid, lemonade, extract of rhatany, ergot of rye, mustard-poultices, &c.

A three-and-a-half ounce mixture, containing fifteen grains of liquid sesquichloride of iron, was prescribed. In twenty-four hours, the hæmorrhagic tendency was checked, the urine alone remaining sanguinolent. The pulse, which had been very frequent, returned to 80 pulsations; on the following day no blood was discharged, and the spots of purpura assumed a dark hue. From that period the disease proceeded rapidly towards cure.

The subject of the second case was a lad of sixteen, who, after considerable growth and hard work, with insufficient food, was seized with febrile symptoms, extreme prostration of strength, and, on the fourth day, presented numerous spots of purpura on the limbs, with sanguinolent motions and epistaxis; the pulse rising to 100 pulsations.

A four-ounce mixture, with fifteen grains of sesquichloride arrested the hæmorrhage in twenty-four hours, and reduced the pulse to 90 pulsations. The potion was continued the next day, and all the symptoms ceased. The medicine was then discontinued for two days. Epistaxis returned twice, but with less violence than before. The pulse again rose to 100. The mixtnre was resumed; on the ensuing day no hæmorrage took place, and the pulse declined to 82. Convalescence was very rapid under the influence of the sesquichloride, which was continued for several days; a small quantity of substantial food and wine were also prescribed.

M. Pize's last case refers to an unmarried woman, twenty-five years of age, who, two years before, had presented symptoms of chlorosis. After five or six days' indisposition, intestinal hæmorrhage appeared, epistaxis and numerous spots of purpura on the limbs. The pulse was weak, and rose to 119. The day after the use of the chalybeate potion, hæmorrhage ceased, the pulse returned to 86, and fell two days later to 62. The disease terminated as in the two preceding cases.

M. Pize then adverts to the analogous case, published subsequently to his own, by Bourguignon, a case to which the reporter deemed it expedient to add a fourth, recently published in the 'Gazette Médicale de Strasbourg,' by Mr. Leroy, de Saint-Ybars.

The following, in M. Pize's estimation, are the obvious inferences from these four cases, all relating to *purpura hæmorrhagica*.

1. Sesquichloride of iron is pre-eminently the agent for the cure of the disease; it arrests the hæmorrhagic tendency in the space of twenty-four or forty-eight hours, and, continued for a few days, rapidly brings about the convalescence of the patient.

2. This medicine produces an immediate diminution in the rapidity of the circulation, decreases the quickness of the pulse in twenty-four hours from 110 to 80 pulsations, and may therefore fairly be considered as a direct sedative of the action of the heart.

II. SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 27.—*Delirium Tremens treated by large doses of Digitalis.* By Mr. JONES, Surgeon to the Jersey Hospital.

(*Medical Times and Gazette*, Sept. 29, 1860.)

"About twelve years ago," writes Mr. Jones, "I was called to see a patient with delirium tremens, residing about a mile from my house, who was almost *in articulo*. I prescribed a dose of chloric ether with tincture of opium; but the wife, who came for the medicine, took, by mistake, a phial containing *one ounce* of tincture of digitalis. I discovered the error, and was horrified when I heard that the patient had taken this dose; but no less surprised than pleased when I also heard that, instead of being poisoned, he was very much better. Under ordinary treatment, I fully believed he would have died; but after this single dose he rapidly recovered. Profiting by this hint, I began to give digitalis in all the cases of delirium tremens which came under my care in hospital and private practice; and during the last twelve years I have adopted it in at least seventy cases—this effect of drunkenness being very common in Jersey.

"As to the dose, experience has taught me that the best dose is half an ounce of the tincture given in a little water. In some few cases this one dose is enough, but generally a second dose is required four hours after the first. In some cases, but very seldom, a third dose is called for; but this hardly ever need exceed two drachms. The largest quantity I have ever given was half an ounce, at first, half an ounce four hours afterwards, and another half ounce six hours after that—making an ounce and a half in ten hours.

"As to the effects of these doses, my impression is that the action is on the brain, not on the heart. The pulse, so far from being lowered in force, becomes fuller, and stronger, and more regular soon after the first dose. The cold, clammy perspirations pass off, and the skin becomes warmer. As soon as the remedy produces its full effect, sleep for five, six, or seven hours commonly follows; sleep is the guide as to the repetition of the dose. No action on the kidneys is evidenced by any unusual secretion of urine. Sometimes the bowels are slightly acted on, but not commonly. I have never once seen any alarming symptom follow the use of these large doses of digitalis. The only case I have lost since adopting this treatment had a tumour on the brain. In three only was other treatment adopted after digitalis had failed to procure sleep; in other words, in sixty-seven out of seventy cases digitalis was the only medicine used, and sixty-six of these patients recovered. I do not mean that these are the exact numbers of those treated; I am certain as to the death, but I may have had more recoveries. I am well within bounds in saying seventy cases in twelve years, and that all of them were well-marked cases of delirium tremens. Slight cases of

nervous derangement after drinking I have seen in great numbers; but I speak here only of such cases as required active treatment. My previous experience of the results of the treatment by opium, or some of its preparations, by anti-spasmodics, &c., had certainly been much less successful; the proportion of deaths was larger, and the recovery much less rapid. Again; I have treated more than one patient successfully by digitalis, who, in subsequent attacks elsewhere, has been treated by opium and died; and in many of the cases in which I have used digitalis successfully, opium had been previously given without any good effect.

"I will only allude to one case in illustration:—On September 9th, 1860, I was called to see a gentleman forty-eight years of age, who was in a very alarming state, having been without sleep four days and nights, having been 'muddled' for two months before, and having previously had 'fits of the horrors.' He had been treated by another practitioner by opium in moderate doses, but had become worse, and when I was sent for it was the opinion of Mr. Spencer Wells and Mr. McCrea—who accompanied me in my first visit—that the case was as bad a one as *they* had ever seen; certainly *I* never saw a worse. The pulse was almost imperceptible; the skin covered with cold, clammy perspiration; the face deadly pale; the lips blue; the hands tremulously grasping the air; the eye expressive of great fear; the mind gone; he was muttering incoherently. With some difficulty I passed half an ounce of tincture of digitalis down his throat in the presence of my friends. In a few minutes he became more tranquil, the pulse was felt more easily, and we left him. After four hours I found that he had not slept, but he was rather more sensible, less tremulous, and warmer. I accordingly repeated the dose. Three hours after that, as he had been still without sleep, though in other respects improving, I gave two drachms more, making ten drachms in seven hours. After this he had some sleep, and had slept at intervals during the night. The next morning, Dr. Ballard saw him, with my other friends, and all of them were much pleased with the great improvement manifested. He was sensible, his fears had disappeared, he was very slightly tremulous; the skin was warm, the tongue moist, and the pulse full and regular at 90. The heart's sound and impulse were normal; the bowels had acted once, and urine had been passed in natural quantity. After this he took some broth, drank freely of imperial and lemonade, but took no stimuli of any kind, or any other medicine. He slept uninterruptedly for three hours and a half in the afternoon, and at intervals in addition. The next night was a good one; and when he was seen by my friends again the next morning he was almost well, and calling out for a mutton chop.

"I trust that this narrative of the results of my experience may induce others to follow what I believe to be a very valuable practical lesson; but I must warn those who do so not to try, as I have done, any smaller doses than those I have recommended. They would not only lose valuable time by so doing, but I believe would do harm. Doses of half a drachm or a drachm do no good whatever; and the pulse, in some cases where I tried them, became intermitting. I

have never seen this effect from the larger doses; on the contrary, a feeble intermitting pulse has generally soon become fuller and more regular, proving, I think, as I said before, and as I again wish to impress on the profession, that the curative action is on the nervous system primarily, and not on the organs of circulation."

Apropos of these remarks, Dr. Armstrong, of Gravesend, relates a case ('Medical Times and Gazette,' October 27th, 1860) which may or may not have its value in a practical point of view.

"About the years 1831 and 1832," says Dr. Armstrong, "a Dr. S— came to London, and published several papers in the journals, on the curative effects of digitalis in epilepsy. These papers excited considerable attention in the profession; and among them persons who either suffered themselves from that disease, or whose friends were afflicted with that distressing complaint. Among the persons who heard of these papers and cures was a patient of the late Mr. Hunter, of Islington. This lady was the daughter of a highly respectable gentleman, who had everything tried for his daughter, but, as is frequently the case, to no good purpose. The young lady was anxious to have Dr. S— called in, and he met Mr. H—. He proposed to give ʒss of the inf. digit. 4tis horis, and to increase the dose daily. Mr. H—, like a cautious and prudent man, told the family he would be no party to this treatment, and Dr. S— took the whole responsibility on himself. The infusion was prepared with the utmost care, and was faithfully administered, Dr. S— seeing the case as often as he deemed necessary. On the fourth day the dose was ʒij 4tis horis. After taking the second dose, about three p.m., she became suddenly faint, tremulous in the limbs, said she could not see, fell back, and was dead in an instant. A hurried message was sent to Mr. Hunter, and I hastened to the house; life was quite extinct, and the family, I need not say, in the greatest distress. From that time to the present I have been very shy of digitalis, and I shall be much surprised if the reckless administration of the two-drachm doses of the tincture does not result in serious consequences some fine day."

ART. 28.—*On Heat-apoplexy, or Sun-stroke, as observed at Lucknow in May and June*, 1859. By Dr. BROUGHAM, Surgeon to the Presidency General Hospital, Calcutta.

(*Indian Annals of Med. Science*, April, 1860.)

The symptoms of this disease are suddenly diminished sensibility, frequently attended with nervous twitchings of the facial muscles, greatly increased heat of surface, the pupil insensible to light, being sometimes contracted, at others dilated, in all cases fixed. The hands occasionally are uncertainly employed in feeble efforts as though to remove some obstruction from the throat or lips. The respiration greatly quickened, is short and hurried, inspiration being more particularly like a catching momentary effort than a healthy drawing in of air. Expiration is considerably prolonged, and almost always accompanied with a distressing moan which attends each act. By the stethoscope the air may be heard passing through the larger

bronchi as through so many tubes, without any attendant respiratory murmur, instead of which crepitant râles reach the listener's ear, caused by air passing through frothy mucus, which seems entirely to fill the air-cells and minute bronchi. In the latter stage the air seems to enter the larger tubes alone, no other sound being heard.

The pulse is exceedingly quick, sometimes so rapid as to render counting a difficult matter; commonly the pulsations exceed 140 in the minute. Sometimes, when addressed, the sufferer seems to endeavour to comprehend what is said, and to use his utmost effort to catch the meaning of the words addressed. Occasionally false impressions are conveyed to the mind, and ideas so received are followed by acts showing a degree of consciousness, and some remains of voluntary power. It was not unusual for those suffering to cry as for help, and struggle as their clothes were being removed. One, when water was dashed over his head and chest, evidently impressed with the idea that he was drowning, extended his hands and legs, making feeble motions as though swimming. A frequent desire of spitting was not uncommon, and greenish matter was sometimes ejected from the stomach: in no case was there reason to suspect that those seized were labouring under intoxication at the time of attack, nor did I ever detect the smell of ardent spirits in the matter ejected, except where such had previously been given as a remedy in the hospital. Fæces were frequently passed without consciousness, at other times attempts were made to get out of bed, evidently with the idea of going to stool. The sensibility of the skin was greatly diminished, so that blisters causing vesication were seemingly not felt, and cupping-glasses applied, occasioned not the slightest inconvenience. Invariably there was a highly increased temperature, and great dryness of the whole surface, the heat continuing long after death. Dr. Brougham never observed any redness or flushing of the face, but rather the reverse, namely, a degree of pallor.

Where death occurred, the sensibility continued to diminish, the pulse increasing in quickness, decreasing in force. In some cases the heart seemed to pulsate after respiration and sensibility had entirely ceased. Frothy mucus frequently flowed from the lips, or was forced up with each act of expiration, particularly where artificial respiration was had recourse to. The fatal termination was sometimes remarkably rapid. In the first case we had, the man who was a patient in hospital suffering from diarrhœa, died in about fifteen minutes. When the attack after some hours' duration passes away, the patient continues in a very critical state, much resembling that after an attack of severe fever.

The first favorable change is an increased power of inspiration, the pulse then falls in frequency, and there is not uncommonly a discharge of urine, after which sleep follows. When this desirable change has taken place, the sufferer is by no means exempt from a return of the paroxysm, on the contrary, there was a decided and well-marked tendency to periodicity in the returns of the attack, though as they recurred during the hottest time of the day, it may be considered that the increased temperature was a sufficient explanation of the recurrence of the disorder. The usual time in the twenty-

four hours for the attack to commence was between three and five p.m., but sometimes it occurred between half-past one and half-past three a.m.; thus it would seem, the two periods, when the complaint may be more particularly expected, are when the heat is greatest, and the electric currents weakest.

A post-mortem examination was made in every case of death which occurred in the Fusilier Hospital, and it was found that:

1st. There was invariably a very remarkable effusion of serum, both beneath the arachnoid and in the lateral ventricles, amounting, in some cases, to two ounces; this fluid also was found within the Theca vertebralis. There was also much venous congestion about the base of the brain and medulla oblongata. In no case was there rupture of any vessel, or sanguineous apoplexy.

2dly. The lungs externally were always free from traces of inflammation except where disease had previously existed, in some few cases a small quantity of serum was found within the pleural sac. The lung tissue, however, invariably seemed much redder than usual, and crepitated on pressure, while frothy mucus exuded abundantly from incisions made into the substance.

3dly. There was almost invariably a considerable quantity of serum within the pericardium, and in one instance fresh fibrine had been deposited between the pericardium and serous covering of the heart. The right side of the heart was always engorged with very dark fluid blood, and the left empty. No trace of internal disease of this organ was ever seen.

4thly. The liver seemed always to contain some excess of blood, but was healthy in structure.

5thly. In one case the spleen was enlarged, and was engorged to a considerable extent.

All other organs were in a normal state.

Cold water dashed or poured from a height on the head, chest, &c., artificial respiration by the "ready method," and stimulating enemata are the remedies to which Dr. Brougham attaches most confidence.

Art. 29.—*On the Progressive Paralysis of the Insane.* By Dr. William Wood.

(*Med.-Chir. Review*, July, 1860.)

Dr. Wood's object in this essay is to communicate the result of his own experience respecting the affection which is generally known under the name of *General Paralysis of the Insane.* Giving his reasons for a change of name, he says:

"It may be remarked in the first place, that this disease is essentially progressive in its nature, as distinguished from the more ordinary forms of paralysis, which are usually established somewhat suddenly. It commences so insidiously that, until it has made fatal progress, it can hardly be said positively to exist; and although the attendant symptoms furnish a strong suspicion that it is, in fact, in a progressive state of development, many of these symptoms are observed in cases where the patients recover without manifesting any

positive paralysis. Then, again, this form of paralysis is progressive not only in its development in the particular part or parts of the body in which it first presents itself, as evidenced by the gradually increasing difficulty of articulation, &c., but also in its extension by degrees not only in the parts already attacked, but in turn to all parts of the body, until every limb and every function becomes involved, and ultimately so deprived of nervous influence, that life can no longer be maintained, the vital organs ceasing to act, not as a consequence of structural disease in themselves, for it is not uncommon to find in post-mortem examinations of these cases the contents of the chest and abdomen healthy, but as the result of a certain altered condition of the brain and its membranes. Seeing, then, that this disease is in its nature essentially progressive, I propose to adopt this word in preference to that which is now admitted to be inappropriate, and to speak of the 'progressive paralysis of the insane,' instead of the 'general paralysis of the insane.' I am aware that this description is open to the objection that the disease which it is intended to designate does not invariably advance to a fatal termination without remissions, and that consequently it is not at all times progressive. But notwithstanding the occasional alleviation of the symptoms, the actual arrest of the disease, when once fully established, is very rare; and, with few exceptions, the general condition of the patient continues to deteriorate, although there may be from time to time a temporary gleam of reason, and with it some increase of voluntary power. The return of all the symptoms in the same, if not in greater intensity than before, proves that the fire, though for a time subdued, was not extinguished; that, in fact, the disease still existed, though there had been, every now and then, a lull in the symptoms. Then, again, as already observed, the disease, unlike most others, is not limited to any particular limbs or organs, but, by progressive steps, it comes at last to involve every part of the body; and this being a chief characteristic of the malady, must remain a fact, whatever different views, in consequence of increased experience and improved means of observation, we may be led to entertain of the pathological changes which attend, and which are presumed to cause, these peculiar symptoms."

Dr. Wood does not attempt to decide disputed questions, but what he has written will be read with interest by those who wish to have a practical knowledge on the subject. Take the remarks on the differences between the partly developed affection and dementia as an example—

"The disease most likely to be confounded with progressive paralysis is dementia, and the symptoms of the two have, in many respects, a certain resemblance, especially at their commencement and termination. The history, if carefully traced, will very materially assist the diagnosis, and it is not often that the faculties are so continuously dormant as to mislead a practised observer. Sometimes, however, a patient is first seen in an inert condition, presenting all the appearance of ordinary dementia, having already passed through a state of more or less excitement, and to an ordinary practitioner it may never have occurred that, in addition to these symptoms, which are patent to everybody, there are others pointing to a speedily fatal issue which

are not prominent, and may remain undeclared unless sought for with a previous knowledge of what may be found under such circumstances. For instance, a gentleman now under my care presents in all respects the condition of a patient suffering from dementia; he stands or sits staring vacantly, and if taken by the arm will walk without any other manifestation of volition than what is involved in putting one leg before another mechanically; if asked a question, he will perhaps incline his face or direct an unmeaning gaze to the speaker, who might very naturally conclude that it would be useless to persevere in the attempt to obtain an answer from one apparently so incapable to comprehend anything; but an answer may be obtained, nevertheless, by continued efforts to rouse the attention, and then the true nature of the case becomes apparent. The few words that are uttered are produced with considerable difficulty, all the muscular structures of the mouth being apparently involved, and their irregular action very marked. Sometimes when unable to articulate a sound spontaneously, a patient will endeavour to imitate the movements of another mouth, and so copy the words suggested. I have never seen this in dementia, and besides, whatever the present condition, the history of the case will probably tell of a recent period when there existed extravagant notions of wealth and capabilities which have become extinguished by the advancing disease, which is obliterating the mental faculties at the same time with the physical powers. The general health continues tolerably good, that is to say, the animal functions are well performed, the appetite is good, the pulse, though somewhat accelerated, is yet not different to what is commonly found in perfect health; the patient sleeps well, and is evidently quite unconscious of suffering any ailment, but, on the contrary, says as distinctly as he is able, that he is quite well. Although there is at times entire vacancy in the expression of the countenance, or more correctly, an absence of any expression at all, there is less change of features than is observed in ordinary chronic dementia, which has gone on to the extent of rendering the individual helpless for the performance of all the duties of life, and for any attention to his personal wants. Although in chronic dementia a patient may experience an occasional access of excitement, this comes as an aggravation of his lost condition, and there are no variations which can be regarded as evidence of a tendency to improve. In the condition resembling dementia, which forms the advanced stage of progressive paralysis, there are frequently variations which are apt to deceive the inexperienced, and raise hopes which are sure to be disappointed. The most urgent symptoms are so far alleviated that the patient is again able to understand what is said, to answer a question rationally, to attend more or less intelligently to his personal wants, and to take notice of, and even some interest in, what is going on around him, and this improved condition may continue for many weeks, the imperfections of speech and gait, however, remaining, though in a less degree, until another change occurs, and all the former symptoms are re-established as distinctly as ever. In chronic dementia there seems to be a permanent change in the brain, which is not susceptible of amelioration; in progressive paralysis, the pathological condition, whatever it is, admits of only temporary remission, and accordingly a change,

which astonishes everybody, sometimes occurs, which restores a patient, to all appearance moribund, to a condition which is really a marked improvement upon his state a few days previously."

Art. 30.—*On consecutive Cerebral Ramollissement.* By Dr. Adolphe Gubler.

(*Archiv. Gén. de Méd.*, July, 1860.)

Dr. A. Waller has shown that if the anterior root of a spinal nerve be divided, the nerve-tubes towards the peripheral extremity of the nerve quickly become modified in structure, whilst the portion of the nerve-trunk remaining attached to the spinal column retains its normal character. But if the posterior root of the nerve be divided, between the ganglion and the cord, it is, on the contrary, the central portion of the nerve which undergoes a change of structure, whilst the peripheral remains unaltered. Dr. Gubler thinks that this difference in results may be explained by the inverse nature of the two nerve-currents, centrifugal in the first case, centripetal in the second: the permanence of the current, that is to say of the function, maintaining integrity of structure, and the cessation of the current or function inducing quickly alteration of structure in the diseased organ. Thus he conceives that we see constantly verified a general law of physiology, to wit, that the organ is made for the function. Whatever the explanation may be, the experimental facts demonstrated by Dr. Waller exist, and Dr. Gubler believes that traumatic or spontaneous lesions, which occasion an organic breach of continuity in the nerves and nervous centres, will bring about structural results and consequences, similar to those observed on experimental division of nerve-cords.

In illustration, he relates a fatal case of illness marked by symptoms of cerebral ramollissement, unilateral hemiplegia, with muscular rigidity, and abolition of speech. The autopsy showed plastic infiltration with inflammatory softening of a great portion of the medullary substance of the left hemisphere; and softening of different parts of this hemisphere situated between the first lesion and the spinal cord, and particularly of the inferior portion of the left cerebral peduncle. The pathological changes were, he conceives, to be assigned to two orders of facts, the one active, the other purely passive. The plastic infiltration of the left hemisphere was evidently of an inflammatory character, and had doubtless marked the outset of the affection, giving rise to symptoms of softening with irritation which had been observed four months before the fatal termination. On the contrary, the softening of those portions of the encephalon situated between the centre of the left hemisphere, the seat of the inflammatory change, and the periphery of the body, Dr. Gubler regards as a phenomenon comparable to that alteration of the peripheral portion of a nerve, which follows a section of its anterior root in the vicinity of the cord. If we note the seat of the peduncular softening, the inferior portion of the peduncle, we find that it is precisely this locality in which, accord-

ing to all anatomists, are found the prolongations of the anterior pyramids, in other terms, of the motor bundles which are about to be distributed to the members. This would follow from what we have premised, these lesions being regarded as peripheral ones in relation to the primitive centre of the cerebral affection. Another circumstance to be noted was, that the softened parts below the region of the hemisphere which was inflamed chronically and infiltrated with plasma, did not present any signs of exaggerated vascular action, any exudation, and nothing which indicated active morbid action: there was seen simply a breaking down of structure, and an accumulation of fatty globules, coming no doubt from the *axis cylinder* of nerve-tubes in process of destruction. The softened and nearly deliquescent bed of the left cerebral peduncle seemed to be about to undergo a melting like the putrefaction of a dead fœtus in the uterus, or of a sphacelated organ. Dr. Gubler concludes, therefore, that there was in this case a *primitive lesion* due to active changes of an inflammatory nature, and a *consecutive* and *passive lesion*, depending upon the interruption of the nervous efflux in the bundles of motor nerves. The same thing, he thinks, may have place in all cases of cerebral affections, and it is important to bear this probability in mind.

Lallemand relates (Letter II., obs. 3, § 4) a very extraordinary fact, which may be looked upon as an example of secondary lesion, ascendant or centripetal. A soldier suffered from a traumatic aneurism of the right axillary artery. The vessel was tied, but unfortunately the brachial plexus was included in the ligatures. The operation was immediately succeeded by excruciating pain in the neck, which often recurred during the following days. To this pain were subsequently joined cerebral phenomena, convulsions, and sinking. Death occurred, and at the autopsy the posterior extremity of the left hemisphere was found softened and greenish, these changes extending to the corresponding lateral ventricle. The softening had proceeded even to diffluence, and in the centre there was more than a spoonful of a thick greenish liquid, which Lallemand considered to be pus.

Dr. Gubler asks, by what mechanism this profound alteration of the left cerebral hemisphere was produced, which arose from and depended upon the nerves of the right brachial plexus? Was it caused by a transmission of irritation, a propagation of inflammation, or a suppression of function? If it were certain that the ultimate cerebral changes were purulent, it would be requisite to have recourse to the first of these hypotheses, and the probability would be in favour of the transmission of irritation, with the creation at the spot of an inflammatory change determined by nervous excitation; but the greenish tint of a ramollissement does not necessarily imply the presence of an infiltrated purulent liquid, certain cerebral gangrenes independent of all inflammatory action having shown a like tint. A doubt then is permissible, and the idea of the case being one of *ramollissement atrophique* is not improbable. Dr. Gubler thinks, also, that other cases are on record which support his views. For example, M. Charcot has published a case of atrophy of a cerebral hemisphere, coinciding with atrophy of the spinal cord on the opposite side; and M. Luys has communicated to the Society of Biology the result of his researches

upon a case of alteration of certain nerves of the members, as the sequel of an attack of hemiplegia of cerebral origin.

Dr. Gubler terminates his observations by the following conclusions:

1. It is necessary to distinguish, in affections of the nervous system, two classes of lesions: the one primordial and essentially variable; the other secondary, or consecutive.

2. The consecutive alterations are sometimes localized around the protopathic lesions, sometimes transmitted to a distance. The first, long known, are occasioned by eliminating or irritating inflammation, and consist in circumferential softenings, ventricular or sub-arachnoid effusions, resorption of tissues, formations of cysts, &c.

3. The secondary lesions, propagated to a distance, and newly submitted to observation, appear to be of two kinds—active and passive.

4. Those resembling the retrograde transformations undergone by tumours which have ceased their evolutions, or by a fœtus which has died in the uterus, ought to be considered as the result of an abolished or enfeebled nutrition; in a word, of atrophy. And as these changes are characterised by a diminution of cohesion of the nervous substance, extending even to diffluence, it will be convenient to apply to them the denomination *atrophic softening—ramollissement atrophique.*

5. This atrophy appears to be linked to the suppression of the functions of the part which is the seat of it; consequently, a protopathic lesion being given, there will be secondary passive ramollissement in two directions; on the one hand, between the primitive lesion and the central parts, affecting the bundles devoted to feeling; on the other, between the same lesion and the periphery, affecting the conductors of movement.

6. Thus the softened tracks in the one and the other direction, studied by attentive observers, will serve to fix the respective situation and position of the sensitive and motor fibres in the cords, as well as in the nervous centres. Here still pathology will furnish light to anatomy and physiology.

7. Clinical observation has not yet given us any information upon the particular symptoms of secondary atrophic ramollissements; but we can foresee that in their progress the phenomena of excitement, such as muscular rigidity, will cease, provided that the long duration of the primitive affection has not given place, in the muscles, to changes of condition which are opposed to the mobility of the parts.

Art. 31.—*On Œdema of the Brain.*
By M. Marcé.

(*Bull. de la Soc. Anat.*, 1859; and *Medical Times and Gazette*, July 7, 1860.)

M. Marcé communicates to the Paris Anatomical Society the results of some researches he has made upon this subject. The opinion that cerebral œdema is the cause of the "stupidity" of the insane after having made considerable way has, of late, fallen into discredit, doubtless from not having been based upon any exact demonstration.

M. Marcé has made some researches upon the matter, as far as relates to pathological anatomy, conducting them with the most rigorous precision.

1. His first object was to determine the quantity of water contained in the normal state of the cerebral substance; and to this end he has examined the white and gray matter separately. They were dried in a stove at 100° C., and the weight of the water lost was determined by the balance. The following are the mean results obtained in man and some animals:

	100 Parts of Gray substance.		100 Parts of White substance.	
	Solids.	Water.	Solids.	Water.
Man	20	80	30	70
Sheep	16·4	83·6	30	70
Calf	14·3	85·6	30·2	69·8
Ox	17·4	82·6	36·3	63·7
Rabbit	20·8	79·2	35·7	64·3
Pheasant	17·3	82·7	23·1	76·9
Owl	23·8	76·2	33·3	66·7

From these researches two consequences result:—1. In the normal state the gray substance of the human brain contains more water than the white, seeing that 100 parts of the one contain 80 parts of water to the 70 of the other. 2. In all the species of animals this predominance is also found in different degrees—the mean difference being a tenth of the total weight.

2. The next point was to ascertain whether the cerebral substance was capable of absorbing additional quantities of water without its texture being altered, *i.e.*, whether cerebral œdema could exist. To this end two orders of experiments were instituted: 1. Brains which had remained untouched were injected with pure water; and 2. Fragments of cerebral substance were left to soak in water for twenty-four or forty-eight hours or more, and were then weighed. It was found that the fragments had absorbed 50 per 100 of their weight of water, so that 30 parts of solid matters in place of corresponding to 70 parts of water, as in the normal state, corresponded to 150 parts. Necroscopic researches have confirmed these experiments, for on submitting brains to desiccation the membranes of which had been infiltrated with serosity, it has been constantly found, especially with respect to the gray substance which is more immediately in contact with the effused serosity, that there was a more considerable quantity of water in such brains than in the normal state, as, *e.g.*, 85·90 per cent. in place of 80 per cent.

Thus, in spite of its close texture, the cerebral parenchyma may absorb water and become œdematous. The fact is of importance in various points of view. 1. Thus in comparing the two hemispheres by weight we must not forget that a simple serous infiltration may give rise to a difference in weight which may erroneously give rise to the belief in atrophy of the opposite hemisphere. 2. Infiltration of the parenchyma necessarily gives rise to an increase in volume, which is a matter of great importance in an organ inclosed in a non-extensible case. 3. The symptoms of cerebral compression attributed to the presence of peripheric serous effusion are not only due to this super-

ficial layer of fluid, but also to the increase in the volume of the brain arising from absorption of fluid. 4. The methodical desiccation of the brain, the sole method of ascertaining its œdematous condition, should be employed in the anatomo-pathological study of the organ. It is possible in this way we might discover the anatomical cause of cerebral symptoms hitherto referred to the class of neuroses or nervous affections.

ART. 32.—*On a form of Hypochondriacal Delirium consecutive to Dyspepsia, and characterised by refusal of food.* By Dr. L. V. MARCÉ.

(*Annales Médico-Psychologiques*, Jan., 1860; and *Jour. of Psychol. Med.*, April, 1860.)

Amongst the numerous and varied forms of dyspepsia there are some which should especially attract the attention of psychopathists, on account of the peculiar mental condition thereby determined.

We see, for instance, young girls, who at the period of puberty and after a precocious physical development, become subject to inappetency carried to the utmost limits. Whatever the duration of their abstinence they experience a distaste for food, which the most pressing want is unable to overcome; with others the appetite is not wanting, but the digestion is painful, accompanied with flatulence, lowness of spirits, and discomfort. These two varieties of dyspepsia, which are very common, when they occur in young subjects predisposed to insanity from hereditary antecedents, and rendered still more impressionable by that profound nervous disturbance which accompanies the establishment of the menstrual functions, may, by a process of ideas easy to follow, determine a state of partial delirium. Deeply impressed, whether by the absence of appetite or by the uneasiness caused by digestion, these patients arrive at a delirious conviction that they cannot or ought not to eat. In one word, the gastric nervous disorder becomes cerebro-nervous.

It is easy to foresee the consequences of this new morbid condition. All attempts made to constrain these patients to adopt a sufficient regimen, are opposed with infinite stratagems and unconquerable resistance. The stomach digests perfectly what is committed to it, but in the end it comes to content itself with the feeblest doses of nourishment, until one is surprised that life should survive so long with such slender means of reparation. I have observed several cases (and in these the suspicion of fraud must be altogether discarded) where the patient has lived six months, a year, and even more, upon a few spoonfuls of soup or a few mouthfuls of sweetmeat or pastry daily: in one case observed, the amount of liquid and solid food taken, which was exactly weighed, did not exceed fifty grammes a day. It is true that then attenuation proceeded to the last degree; all trace of adipose tissue had disappeared, and the patients were reduced to skeletons; the teeth blackened, the mouth became dry and the tongue red and furrowed; the constipation was such that it was difficult to provoke the expulsion once a fortnight or once a month of matter hard and ovular; the urinary excretion was almost nil, and the abdo-

minal coat was so contracted as to touch the vertebral column; the skin became dry and wrinkled, the pulse filiform and insensible, and all the symptoms preceding death from inanition were strikingly displayed; the weakness soon became so great that the patients could scarcely walk a few steps without being seized with fainting. The nervous predisposition increases with the debility of the organism; the affective sentiments undergo alteration, and all the intellectual energy centres round the functions of the stomach; incapable of the slightest exertion or of sustaining the least conversation beyond their delirious ideas, these unhappy patients only regain some amount of energy in order to resist attempts at alimentation, and very often the physician beats a retreat before their desperate resistance.

Some of these sufferers, at the end of months or years, and after numerous oscillations in their condition, literally die of hunger. In one case of this description, in which a post-mortem examination was made under my eyes, the stomach was perfectly uninjured; the mucous membrane was healthy, without injection or softening; the capacity of the stomach was perfectly normal.

It must not be forgotten, therefore, that by reason of the anatomical integrity of the digestive organs, medical intervention may be most advantageous even when the patients appear devoted to incurability and death. I have seen three young girls thus cured, who were reduced to a most alarming and almost desperate state; it remains, then, to inquire what are the indications we have to follow, and in what way should medical action be directed.

In reference to the greater number of these cases which have come under my notice, I would venture to say that the first physicians who attended the patients misunderstood the true signification of this obstinate refusal of food; far from seeing in it a delirious idea of a hypochondriacal nature, they occupied themselves solely with the state of the stomach, and prescribed, as a matter of course, bitters, tonics, iron, exercise, hydro-therapeutics, with a view to stimulate the activity of the digestive functions. However apparently excellent these therapeutic measures may be, they always proved insufficient when the malady was in an advanced stage. It is then no longer the stomach that demands attention, for the stomach is well able to digest, and suffers only from want of food; it is the delirious idea which constitutes, henceforth, the point of departure, and in which lies the essence of the malady; the patients are no longer dyspeptics—they are insane.

This hypochondrical delirium, then, cannot be advantageously encountered so long as the subjects remain in the midst of their own family and their habitual circle; the obstinate resistance which they offer, the sufferings of the stomach, which they enumerate with incessant lamentation, produce too vivid emotion to admit of the physician acting with full liberty, and obtaining the necessary moral ascendancy. It is therefore indispensable to change the habitation and surrounding circumstances, and to intrust the patients to the care of strangers. If the refusal of food continues notwithstanding these efforts, it becomes necessary to employ intimidation, and even force. If by this last method a satisfactory result be not obtained, I would not hesitate to

recommend the use of the œsophagus sound. But it is necessary to proceed progressively and by degrees. Each day and at each repast the nourishment, be it liquid or solid, should be gradually increased, and it would be even well to weigh the food, in order to proceed with greater sureness and confidence, without relinquishing a single step.

Adjunct means should not be neglected, and bitters, as well as steel medicine, combined with sufficient alimentation, may render good service. As to exercise and gymnastics, which are commonly recommended, they have the inconvenience of occasioning a great expenditure of strength, which the daily alimentation is unable to withstand; these should therefore be reserved until convalescence is well established, and should be used with great caution.

When, by the aid of these precautions, the amount of nourishment has been raised to proper proportions, the patients will be seen to undergo a great change, their strength and condition to return, and their intellectual state to be modified in a most striking manner. It will be prudent, however, for a long time to exercise rigorous watchfulness, and to combat energetically the least retrograde tendency, should such appear. Relapses are in these cases easy; and besides, this form of hypochondria is the index of a nervous predisposition which cannot be noticed without a feeling of uneasiness as to the intellectual future of the subject.

Without wishing to generalise too much on the influence ultimately exercised by the intellectual condition with reference to insufficient alimentation, I think that this is an element which it is well to bear in mind when dealing with many nervous disorders; the majority of hysterical and nervous sufferers make themselves remarkable for the slenderness of their diet, by their liking for indigestible food, and their antipathy for bread, meat, and strengthening dishes. These dispositions are met without any stomachic-nervous disorders, properly so called, for a sustained effort of the will suffices to lead the alimentation back to regular conditions; let this point of practice, then, be insisted on, for the sickly predominance of the nervous system is kept up by the impoverishment of the blood which results from imperfect nutrition; and so long as the patients will not apply their will to nourish themselves in a suitable manner, it will be impossible to reckon upon a solid cure and safety against all danger of relapse.

Art. 33.—*A case bearing on Cerebellar Pathology.*

By Dr. Rolleston, Linacre Professor at Oxford.

(*Medical Times and Gazette*, Feb. 18, 1860.)

Among other symptoms of cerebellar disease enumerated in certain recently recorded histories of such cases, are the two following lesions of motility:

1. Inability to maintain the correct posture when raised into it, coupled with complete power over either or both of the legs, when in the horizontal posture.
2. Stiffness of the neck.

These two sets of phenomena, when combined, in Dr. Rolleston's opinion, point all but pathognomically to cerebellar disease.

"By an application to cerebellar physiology of the views which Schroeder Van der Kolk may be considered to have established in his 'Essay on the Medulla Oblongata,' as to the functions of the corpora olivaria, we are enabled," says Dr. Rolleston, "to reduce under one expression the two theories which speak of the cerebellum as the centre for muscular sensibility on the one hand, and for the co-ordination of muscular movements on the other.*

"Complicated bilateral movements postulate two sets of nerve-structures,—1. Special ganglia, in addition to the ganglionic masses in connexion with the roots of the nerves of either side. 2. Compound fibres bringing these special ganglia into intimate connexion, first with the ganglia of the nerve-roots, secondly with each other.

"To illustrate from the medulla oblongata. An impression, either from above or below, either volitional or reflex, arrives in the medulla oblongata, and calls for the bilateral action of any one of the several consecutaneously-acting sets of muscles which that nerve-centre co-ordinates. This impression the corpora olivaria receive; and they so modify and prepare it, 'recudunt denuo ac moderantur,' that it calls forth, when reflected on to motor nuclei, and down motor fibres, the required bilateral muscular action. I shall attempt, after relating the case of cerebellar disease at present under observation, to show that what we know alike of the pathology and of the physiology of the cerebellum is clearly explicable on the hypothesis that that great nerve-centre stands in the same relation to the motor nerve nuclei of the trunk and (posterior?) limb muscles, as the corpora olivaria do to the motor nerve nuclei of the face, tongue, and throat muscles.

"The former of the two sets of structures required in an organ with such functions would be represented by the cortical gray matter of the cerebellum; the second by the inferior crura, on the one hand, and the pons on the other; the inferior crura bringing the spinal ganglia into connexion with the ganglionic masses of the cerebellum, the pons bringing these masses into connexion with each other."

Case.—J. R—, æt. 10, last birthday, was admitted into the Radcliffe Infirmary, under my care, December 21st, 1859, with the following history and symptoms.

On April 24th, 1859, she was seized with a "bad cold in the head," and with shivers. No rash was seen, and no scarlet fever was about at the time in the neighbourhood. A week or two after the seizure she lost the power of maintaining the erect position, but at no time did she lose the power of moving her legs when lying in bed. Her medical attendant, F. C. Spackman, Esq., of Farringdon, has been good enough to inform me that what she suffered from was rheumatic fever, and that in the month of August she had two convulsive fits, after which she began to recover the use of her lower limbs and to sit up. She was light-headed from time to time during the summer. She could always use her arms and hands. There is neither history nor present indication of any digestive, respiratory, or circulatory derangement. Lesions of motility are her sole present symptoms. As she

* At the possibility of such an application Schroeder Van der Kolk himself hints. 'Essay on the Medulla Oblongata,' New Sydenham Society, Translation, p. 101.

lies in bed she can turn her head as it lies on the pillow, with some difficulty, however, from side to side. When she is raised up, she catches at and supports her head in her hands; if her hands are removed and her head left unsupported, it falls over to one side or other, whichever side the muscles contract upon. This they do powerfully, first on one and then on the other side of the neck. She can walk along by the side of a wall or table, provided she can get some support for her head, and the hand and arm she rests it upon.

She has been put upon a course of counter-irritation to the back of the head and neck, of iodide of potassium and cod-liver oil, with good diet, and some not very marked improvement is noticeable at present (January 12th).

Comment.—The first of the two sets of symptoms stated at the beginning of this paper to have been observed in cases shown by post-mortem examination to have been cases of cerebellar disease, was obviously present in this case; the neck muscles now alone are affected with that characteristic incompetence for bilateral, coupled with competence for unilateral action.

The second of the two sets of symptoms are also present in her case, but they are but inadequately indicated by the curt phrase, "stiffness of the neck." J. R— has stiffness of the neck, and of both sides of her neck, but not of both sides of her neck at one time. She is raised up, and her head left unsupported; she feels the need of supporting it, and clutches at it with the muscles first of one side and then of the other. It falls over and with much greater force than its mere weight would account for. For the support of the head consentaneous and bilateral muscular action is required, but when the functions of the cerebellum are in abeyance, this result is not obtainable even in obedience to the orders of the will. But no bilateral action is necessary for the turning of the head from side to side if the back of the head lies supported on the pillow. This movement she can execute, therefore, just as formerly she could move either leg whilst lying horizontally, though unable to maintain the erect posture, which postulates bilateral action even for a moment. If we eliminate from the records of cases of cerebellar disease all the phenomena which can be shown to be referable not to lesion of the cerebellum, but of the medulla oblongata just beneath it, the residuary symptoms will be found to be explicable as have been those of J. R—. And, coupling such a study as this with a perusal of experimental lesions, we shall set ourselves free from the suspicion of having argued in a circle, from facts to theory, and from theory back to facts.

The unavoidably imperfect history prevents us from doing more than conjecture what has been the immediate cause of the cerebellar lesion in this case. Probably the meninges were first affected. What support does comparative anatomy give us in speaking of the cerebellum as the nerve-centre destined for the reception of impressions, calling for a bilaterally consentaneous working of trunk and limb muscles, and for the endowment of such impressions with the power of evoking such movements in the way of reflex action?

Art. 34.—*On the Mental State in Chorea.* By Dr. Marcé.

(*Annales Medico-Psychol.*, Jan., 1860.)

The moral and intellectual faculties are very commonly disordered in cases of chorea. In a given number of instances, two thirds at least will manifest, in a more or less prominent manner, indications of this psychical disturbance. As to the immunity which is observed in the remaining third, it cannot be explained either by the age or

the sex of the subjects, or by the extent or intensity of the convulsive movements.

Four morbid elements, sometimes isolated, more often associated one with another, ought to be studied in the mental state of patients suffering from chorea:

(1.) Disorders of the moral sensibility, consisting in a notable change of the character, which becomes bizarre and irritable; in an unaccustomed tendency to gaiety or to sadness, especially the latter.

(2.) Disorder of the understanding, characterised by weakness of memory, and great mobility in the ideas and impossibility of fixing the attention.

(3.) Hallucinations, phenomena which until now have never been noted in chorea. These hallucinations supervene in the evening, in the state intermediate between sleeping and waking, more rarely in the morning when awaking, and sometimes whilst dreaming. Often they are limited to the sense of sight, but in rare cases they affect the general sensibility and even the sense of hearing. They are met with in purely uncomplicated chorea, but their occurrence is much more frequent whenever the affection is associated with hysterical symptoms. If, in the majority of cases, these hallucinations constitute a symptom without gravity, they may, under certain exceptional circumstances, induce excitement and delirium.

(4.) Finally, chorea may, at its commencement, or during its course, be complicated with maniacal delirium. This gives rise to a very grave state, which in more than half the cases has a fatal termination in the midst of formidable ataxic accidents; and even in the favorable cases, it often induces sundry disordered states of the intellect of variable duration. Inhalations of chloroform, prolonged baths, and antispasmodics, are the therapeutic means which have proved most serviceable in the treatment of this delirium, which, in the majority of cases, is to be regarded as a purely nervous affection.

ART. 25.—*Case of Traumatic Tetanus recovering under the use of Aconite.* By Mr. DE MORGAN, Surgeon to the Middlesex Hospital.

(*Lancet*, Aug. 18, 1860.)

CASE.—The patient in the present case, a lad æt. 15, had always enjoyed good health.

On the 30th of August, 1858, while wearing thin boots, he trod on a rusty nail, which pierced the ball of his foot. He withdrew it directly; the wound bled but little, and healed in a few days.

On Sept. 6th, the boy felt stiffness about the neck and lower jaw, which increased daily, and on the 12th he was unable to open his mouth, and could not walk owing to the stiffness of his back. He was admitted into the hospital on the 16th. There was then well-marked rigidity of the muscles of the neck and jaws, and the risus sardonicus was characteristic. He was unable to turn his head or separate his jaws; abdominal muscles very tense; complains of much pain in the neck and back; has not slept for two or three nights; bowels open; perspiring; pulse 80, moderately full. A hard cicatrix in the

sole of the foot was excised. He was at first put upon strychnine, one tenth of a grain every two hours; carefully watched; soon diminished to one twentieth of a grain, but the symptoms continued to increase. Twitchings began in the thighs, and great difficulty of respiration, and finally severe general spasms, with well-marked opisthotonos.

On the 20th, the plan of treatment was changed, and tincture of aconite was given, at first five minims every two hours, then eight minims. This was continued till the 27th. The dose was then administered every four hours, and on the 28th every six hours, and on the 6th of October it was left off altogether. The diet was throughout the most nourishing that could be taken—strong beef-tea, brandy, &c., and the bowels were kept open by turpentine injections. From the time the aconite began to take effect an improvement took place in the severity of the symptoms, and he has been steadily and gradually progressing, though very slowly. First the general spasms and opisthotonos ceased, then the convulsive twitchings of the extremities; these lasted till about the 1st of October, at which date he could sit up for his meals, could separate his teeth about half an inch; ate and slept well; face almost regained its natural expression.

Has been slowly convalescing since then. Can now (October 22d) walk about, and appears in good health and spirits; only still feels a little stiffness about the muscles of the back, and cannot yet quite separate the jaws as wide as natural.

He was discharged from the hospital well on November 2d.

Art. 36.—*Case of Epilepsy accompanied by some uncommon symptoms.* By Dr. Paget, Physician to Addenbrooke's Hospital, Cambridge.

(*British Med. Journal*, Sept. 22, 1860.)

The most extraordinary symptoms in the following case were *fits of involuntary laughter*, which Dr. Paget regards as *minor or abortive* attacks: other symptoms were paroxysms of tetanoid spasms, rolling and turning movements, and involuntary noddings of the head. Involuntary laughter is, no doubt, a rare symptom in cases of this kind, but it does occur now and then; and Dr. Paget has been at the pains to collect four or five other cases which are more or less in point, and to relate them in his paper.

Case.—D. C—, an agricultural labourer, residing with his parents at Meldreth, æt. 20, and unmarried, was admitted an in-patient at Addenbrooke's Hospital, on July 2d, 1856. From that time until August, 1858, he was almost continuously under observation, either as in- or out-patient.

He had (and has) much of the ordinary appearance of an agricultural labourer; a robust figure, a head not ill shaped, but the occiput and nucha are large, and his forehead looks heavier than it did in 1856. His features are regular, but have a dullish grave cast. His intelligence is of an ordinary kind, without the smallest pretensions to brightness. From his looks, one would infer him to be as free from nervous excitability as his class commonly are.

At the time of his first admission to the hospital in July, 1856, he had been subject for three weeks to violent epileptic fits. He had had six of them before his admission; and similar attacks recurred from time to time during the two years he was under observation. These fits were of the ordinary type of a complete epileptic fit; the insensibility profound, the

spasms violent, the mouth frothy, the tongue sometimes bitten, the urine passed involuntarily; sometimes the seizures took place in his sleep, and all of them ended in coma. The longest interval between any two of the fits was about seven weeks; but in general the interval was much shorter. On three occasions the fits occurred in paroxysms or groups—as many as seven, nine, or eleven succeeding one another, without any recovery of consciousness in the intervals. On one of these occasions, it seemed not improbable that he would have succumbed either to exhaustion or suffocation, the larger bronchi and trachea having become filled with mucus. I was examining his pupil in one of the intervals of coma; and as the next fit came on, I saw it change from a state of extreme contraction to one of wide dilatation. The spasms in this fit were more tonic than clonic.

Of these regular epileptic fits, I have no more to say. They possess no special interest, except in their relation to the peculiar symptom, which has induced me to bring the case under notice.

This peculiar symptom was *frequent bursts of unmeaning laughter*. They occurred day after day, and several times in the day. He had been subject to them for the eight or nine months which immediately preceded the regular epileptic fits; the first of them having come on in the field, while he was ploughing. They were witnessed, times without number, while he was in the hospital, by the nurse, the other patients, by many of the pupils, by Mr. Carver (then house-surgeon), and on some few occasions by myself. There was, I believe, no difference of opinion as to their being perfectly involuntary.

Their occurrence was always sudden, and without obvious cause, and seemed wholly independent of external circumstances or time of day. They occurred not only by day, but quite as often by night, and while the patient was asleep. In answer to my inquiries, he said they were not attended with any ideas of fun or jokes, or any sense of the ludicrous. He was not conscious, formerly, of any cause for the laughter. More recently he has got a notion of their cause, to which I shall hereafter refer.

The duration of the laughter was only about a minute, and then it generally ended, like the ordinary laugh of a person who has been amused by something ludicrous; but on some occasions it was rather more prolonged, and was accompanied by movements of the shoulders and legs, and on more than one occasion he fell back upon the bed, on the edge of which he had been sitting.

The first of the laughing fits witnessed by myself was on September 10th, 1856. I happened to be in the ward when he was seized. He was in a small room opening into the ward, and was standing at a sink washing his face. I suddenly heard a laugh, and on looking round saw him laughing, as it were, heartily. The sound of the laugh was not loud and unnatural, like of hysteria. His face had the expression which ordinarily accompanies a hearty laugh. His shoulders were advanced alternately, and moved also from side to side with the trunk, in a manner which would have been natural in a person excited by great merriment. After a few seconds he began to dance, in the way in which some persons of very excitable temperament are apt to do when highly delighted, lifting his feet high, much in the way in which Irishmen are represented dancing at a wake, or as Dutch boors at a fair in the pictures of Teniers. He did not fall, or seem likely to fall, and was not convulsed, unless the laughter and movements associated with it be regarded as convulsive. On the nurse calling him sharply by his name, the laughter and movements speedily ceased, and his face assumed in a moment its habitually dull and serious look. The suddenness and completeness of the change in his expression were very curious and striking.

In reply to my inquiries, he said that he did not know why he laughed, except that he could not help it; that his laughter was not excited or accompanied by any ludicrous idea; that he was quite conscious of our looking at him during the fit, but could not restrain himself. The nurse informed me, that it was only within the last week that the attacks had exhibited the dancing accompaniment, and that the one I had witnessed was a more lively one than usual, presenting more of the dancing and other movements associated with the laughter.

I have notes of another attack which I happened to witness in March, 1857. On this occasion he did not dance. He laughed with apparent heartiness, swinging himself about while holding on with one hand to a bed-post. The expression of his face was exactly that of a person enjoying a good joke, and, when the attack ended, the suddenness of the change to his ordinary dull and grave look was exceedingly curious. He said as usual, in answer to my inquiry, that no ludicrous thought had been in his mind during the attack.

These two laughing attacks, which I have described from my own observation, were accompanied with more of the general movements of the body than were frequently noticed on other occasions. The more common seizures consisted of a simple burst of laughter, coming on suddenly and ceasing abruptly.

In August, 1857, he began to pass his urine involuntarily in these laughing attacks, as he had previously done in the complete epileptic fits.

The number of laughing fits in the twenty-four hours was generally about three or four, but their number varied from one to eleven, or even more. In one night as many as sixteen were counted, in another night eighteen, and on a third occasion the nurse reckoned as many as thirty slight attacks in the twenty-four hours. In the period of more than four years he has rarely passed twenty-four hours without at least one attack of laughter. Now and then, a suspension of the laughter for a single day, together with heaviness and drowsiness, would be precursory of one of the severe epileptic seizures. On the other hand, it happened not unfrequently that a laughing attack passed directly into a complete epileptic fit, the former appearing as an initial symptom of the latter.

When the laughter occurred at night in his sleep, it probably awakened him, for he generally remembered it in the morning.

On the night of the 20th and 26th of May, 1857, besides the habitual laughing fits, he had bursts of moaning and sobbing. These attacks were described to me as apparently of the same general character, but I cannot vouch for the correctness of this view as the sobbing occurred on these two nights only, and I never witnessed it. About the same time, he was suffering from a frequent succession of severe epileptic fits, and also from spasms resembling those of tetanus.

These tetanoid spasms presented another unusual feature in his case—another rare complication of epilepsy. They occurred on May 22d and August 5th, 1857, on the latter occasion associated with other peculiar symptoms, and on both occasions in more or less close companionship with violent epileptic attacks.

On May 20th he had had seven violent epileptic fits. From these he had apparently recovered on the 21st; but on the morning of the 22d I found his look heavy, and his mind dull and confused. I ordered six leeches to his temples, and three grains of calomel to be given. The blood came very freely from the leech-bites, and was still flowing, when he was seized with tonic spasms resembling those of tetanus. They affected the extensor

muscles of the back, neck, arms, and hands; the back was bent, as in opisthotonos, the arms rigidly extended at his sides, and the individual fingers extended and separated from one another to the utmost. These attacks kept recurring at intervals of a few minutes, each lasting a minute or two, during which his face became congested; but he did not froth at the mouth, or bite his tongue, or lose consciousness. His consciousness seemed unimpaired. In the short intervals between these tetanoid spasms, he was excited and excessively restless. He kept crying out—"Oh dear!" "Oh dear!" "Hold me down." These words were repeated very often. He was incessantly changing his position in the bed. Sometimes he said with satisfaction, "That'll do," or, "That's better," when he felt easier.

After about twenty minutes, he expressed a desire to get up and walk about. He walked in a hurried and somewhat excited manner to and fro in the ward. His walk was frequently interrupted by the spasmodic bending back of his head, which brought him repeatedly to a standstill, and made it difficult for him to maintain his balance in standing. His look became anxious and alarmed, and he exclaimed to the nurse that he was sure he was going out of his mind. The walking backwards and forwards seemed to afford him some kind of relief or satisfaction; so did washing with cold water, and drinking cold water; he also took medicine eagerly, and called for more. Sometimes he threw himself on his bed, and instantly the tonic spasms and opisthotonos ensued, whether he was lying on his back or belly; in the latter case his head and feet were raised from the bed, and all his weight rested on his belly. Sometimes his respiration became excessively panting for a few minutes.

Ammonia and valerian having been administered without relief, and more than half an hour having elapsed from the commencement of the paroxysm, I ordered—

℞ Ætheris chlorici, liq. morph. hydrochlor., āā. ʒss;
Mist. camphoræ ʒ vij.

The tetanoid spasms then became less frequent; so, after an interval of twenty-five minutes, I ordered—

℞ Liq. morph. hydrochlor., ætheris chlorici, āā. ɱxx.

After this was taken, both spasms and restlessness manifestly abated. Two more doses were given, at intervals of an hour, and then good sleep was procured.

The next morning I found him quiet and comfortable, but in the evening he was seized with violent epileptic fits, and had nine of them in succession, between 8 and 11 p.m. They were followed by coma and imperfect consciousness of many hours' duration. The peculiar bursts of laughter were of frequent occurrence in the course of this paroxysm of epileptic fits.

Again in August, as I have already mentioned, he had a remarkable attack.

On August 3d, he had three complete epileptic fits.

On the 4th he had one (only one) laughing attack.

On the 5th he ate no dinner, saying he had no appetite. He had no attack of any kind before 5 p.m., when he came in to tea, and the nurse observed that he looked strangely and "wild." When a cup of tea was given to him, he began to throw about the tea with his spoon, as if not aware of what he was doing. Then he left the table and laid himself on his bed, and was instantly seized with a tetanoid spasm, by which his head and heels were raised from the bed, and his weight rested wholly on his belly. This lasted for two or three minutes, and, after a few minutes more, was followed by a second similar attack. Then he began to turn round as he lay on the bed.

When I saw him he was turning from right to left, but he had previously been turning in the opposite direction. He turned around his own longitudinal axis like a roller, occasionally using his hands as if to facilitate the rotation. This movement continued, with short intervals of rest, for more than an hour. He was evidently fatigued with the exertion, his respiration became panting, and his pulse frequent. He passed urine involuntarily. His face had a dull, set, abstracted expression, as if his mind were engrossed by some particular thought or feeling; but he was conscious, and generally answered my questions. Once or twice he asked the nurse to give him the medicine he had heard me order.

After the rolling movement had continued for an hour, he left his bed, and began to walk about the ward, and to turn round, standing in an upright position, like a top. This was mostly from right to left, less frequently from left to right, and at the rate of thirty-five times in a minute. It did not seem to make him giddy; when stopped for a time he did not stagger. I could restrain the rotation with a moderate degree of force, and could lead him across the ward to the window to examine his pupils, which I found sensitive to light, but as soon as he was left to himself the rotation commenced. Now and then, but rarely, it ceased spontaneously for a minute or two. He asked frequently for drink, and once requested to be stopped in order to enable him to drink. After a time he began to belch up wind, and for a long time continued to do so frequently and loudly, after taking some peppermint-water. Now and then he had slight tonic spasms, with bending in of the back. His mental condition remained nearly the same. In answer to my inquiry, "Why do you turn round?" he replied, "I don't know, sir." He said, also, that he was not giddy, and had no pain anywhere. He expressed an expectation that he should be better soon, after he should have had more of the medicine.

This expectation was not *speedily* realised, for though he took frequently repeated doses of morphia and chloric ether, the rotation on his feet continued until 10 p.m., *i. e.* about four hours; then he went to bed, sat up in his bed, and had a rapid nodding of the head for five minutes, followed by one of his ordinary laughing attacks. To this again succeeded tetanoid extension of the whole body, which continued with but short intermissions till daybreak. During all this time he was continuing the medicine; the first two doses were taken at the interval of an hour, subsequent doses at intervals of half an hour, and each dose contained twenty minims of liquor morphiæ hydrochloratis, with an equal quantity of chloric ether, so that altogether he must have taken many grains of morphia. At length, about daybreak, he fell into a quiet sleep, which continued for a few hours.

At my visit at 11 a.m. he was quiet, composed, and sensible, remembered the occurrences of the previous night, but was unable to account for them, complained of giddiness, now and then eructated. His tongue was furred, and his bowels had not been moved for two days. I ordered an enema of assafœtida and other measures, but before they could be tried, he was seized with a violent epileptic fit, and to this succeeded a series of similar fits, with intervals of stupor. Eleven such fits occurred in the course of three hours, the spasms being chiefly tonic, the face intensely livid, the coma profound, and followed by much prostration. After this remarkable episode the laughing attacks recurred daily as usual; but he was free from the complete epileptic fits for a period of thirty-eight days, and then had three of them, besides thirteen laughing attacks, in twenty-four hours.

From the very beginning of his illness, his mother had observed him to appear duller, but beyond some degree of dulness, his mental faculties seemed quite unimpaired until three months after the severe and peculiar attack in

August, 1857. Then (the fits and laughing attacks recurring as usual) he began to grow unreasonable and self-willed, and difficult of control by his parents, with whom he was at that time living.

This was in November, 1857. In the following February, while in the hospital, under Dr. Fisher's care, he was for some days delirious and violent, did not recognise his father or brother, and passed all his evacuations into the bed. From the intellectual disorder he recovered, but the change in his moral character was more lasting; instead of being a goodnatured, tractable lad, as he had been before his illness, he had become, and continued to be, obstinate and self-willed. I may add, that his mother is a little hypochondriacal, and a grandfather of hers was subject to fits.

His *general* symptoms presented little that was remarkable. I was told that he had never had worms, and had never been ill before. His pulse was generally normal in strength and frequency. His tongue was sometimes a little furred; his appetite generally good, but not craving, like that of some epileptics; his bowels a little inclined to costiveness. A loaded state of stomach or bowels seemed now and then to become an exciting cause, or cause of aggravation, of his attacks. This seemed to have been the case in the attack of tetanoid spasms, rotatory movements, and fits, in August, 1857. But the most careful regulation of his bowels failed of affecting any considerable improvement in either laughing attacks or complete fits.

Four times in 1856 and 1857 he had seven attacks of quinsy, without obvious exciting cause. During these attacks, the laughter was generally suspended for a day or two, and as these were days of enforced abstinence, I was led to try the effect of a very restricted diet. For a time it appeared beneficial. During twelve weeks the laughing attacks were slighter, and only two complete epileptic fits occurred; but at the end of this period the apparent success came to an end, and the fits and laughter recurred as before. The effect of treatment was indeed far from satisfactory. Setons (of which he had three in succession) and nitrate of silver, prescribed by Dr. Bond, seemed beneficial, but the benefit was not permanent. When he went home in September, 1857, he got beer whenever he could, and his mother reported that its effects were exceedingly prejudicial. She said that a pint of it would make him "nearly mad." He seldom attended as outpatient; the village carrier refused to convey him, because the strange laughter frightened the other passengers. The poor fellow is not naturally merry; he has rather the look of one who would be slow to understand a joke, or enter into any fun.

For some months both laughing and regular fits have been invariably preceded by an aura, which, originating at a spot below the navel, proceeds directly upwards, and when it reaches his throat he instantly falls into one or other of the fits. Taking an indication from this new symptom, I am now treating him with blisters to the region from which the aura seems to proceed, and am giving thrice a day a grain of valerianate of zinc with two grains of extract of henbane. I cannot at present tell whether any permanent benefit may be expected from this treatment, but there is a remarkable change in his attacks; for, whereas the epileptic fits are not unfrequent, the laughing fits have been absent for several periods of from two to five days, an exemption which he had never before enjoyed since the beginning of his disorder.

ART. 37.—*Cases of Epilepsy in which Tracheotomy was performed.* By (1) Dr. RICORD; and (2) Dr. A. WYNN WILLIAMS.

(1. *Lancet*, Jan 1, 1859); and
(2. *Medical Times and Gazette*, Sept. 15, 1860.)

1. *Dr. Ricord's Case.*—

An unmarried female, æt. 30, epileptic fits seven years, and having lately two or three attacks every day. Tracheotomy was performed, 5th October, 1856, and she continued free from decided fits till the beginning of May, 1857. She had then some severe fits, and it was found that the tube had escaped from the trachea, and was lying outside it. The tube does not seem to have been replaced, and she died on May 31. These scanty details are from the account of the case in the Year Book of the New Sydenham Society.

2. *Dr. Williams's Cases.*—

CASE 1.—The first case is that of T. P—, æt. 18, son of a cabinet-maker, who consulted me in September, 1855, on account of epileptic fits, for which I had attended him from time to time, since he was ten years of age. The fits, to which he was liable at all hours of the day and night, had latterly increased in frequency and duration; and it appeared not improbable that they would in a short time have rendered him idiotic. He had tried every remedy likely to benefit him, without having derived any permanent relief. He had, it is true, derived temporary benefit from several remedies prescribed; but the benefit, if, indeed, it can be considered such, was merely illusory, as the paroxysms had only been postponed to recur in greater severity. It seemed as though the medicines administered had prevented the paroxysms breaking forth until the system had become charged, so to speak, with a number of small paroxysms, which, when united, became strong enough to obtain the mastery, and had then broken forth with redoubled fury. The same effect I have seen produced in other cases.

Such being the state of my patient, I proposed to his parents to open his trachea, and they, as well as the patient himself, willingly assented.

On September 10, I proceeded to operate. The patient was placed in a chair, my assistant holding back his head, so as to draw out, and make tense, the trachea and its coverings. I then plunged Mr. H. Thompson's tracheotome into the trachea, between the first and second rings—gave a few turns to the screw to separate the blades—with very little difficulty introduced the tube between them, and withdrawing the tracheotome, left the tube in the trachea. There was not much blood lost during or after the operation. Unfortunately the tube, on the following day, slipped out, and I was unable to reintroduce it without the assistance of the tracheotome; but on carefully inserting this into the opening, and dilating it by means of the screw in the blades, I easily got the tube between them into the windpipe. For four or five months after the operation, I thought my patient would really have been benefited by it. The fits became far less in frequency and severity; indeed, he at one time remained several weeks without a fit at all. My hopes, however, were again doomed to be blighted. In six months the fits began to recur nearly as often as before the operation. He wore the tube in the trachea about three years, readily taking it in and out himself. I then removed it; I saw him a few weeks ago; the opening is still patent, and he breathes freely through it. He goes about and assists his father a little in the workshop. It is possible that this case might have terminated more satisfactorily had not the patient been addicted to habits of intemperance, as I afterwards learned he was, both previous to and after the operation. Had I been previously made aware of this circumstance, I should not have proposed the operation.

CASE 2.—The second case is that of T. F—, æt. 25, a quarryman, who consulted me in July 1856. He had been subject to epileptic seizures in the night for many years, but had only been subject to them in the day for two years. He had in consequence been obliged to relinquish his employment. He had undergone a good deal of treatment previous to coming under my care. His object in coming to me was that I might perform the operation of tracheotomy upon him, he having heard of the previous case. Considering him a good subject for the operation, I, on July 9, proceeded to operate in the same manner as in the preceding case. I do not think half-a-dozen drops of blood were lost. The patient went on very satisfactorily after the operation. The epileptic seizures became gradually less severe and less frequent, and for the last two years he has had no attacks during the daytime, and only very slight ones at night. I saw him a few weeks ago in apparently good health, although he informed me he had occasionally, though very rarely, slight fits when in bed. He now goes about by himself, and works in the fields, but has not ventured to resume his work in the quarries. He still wears the tube in his windpipe, and will not hear of its being left out, for fear the hole should close up. Both he and his friends firmly believe he has been benefited by the operation.

ART. 38.—*On the treatment of Epilepsy.* By Dr. BROWN-SEQUARD.

(*Medical Times and Gazette*, Oct. 27, 1860.)

Dr. Brown-Séquard generally commences the treatment of epilepsy by belladonna. The usual dose of this remedy for an adult is one quarter of a grain twice a day in pill or mixture. It is very rarely indeed seen to produce any of its specific effects, as dilatation of the pupil, in cases of epilepsy. At our last visit one patient came who complained of dimness of vision, and whose pupils were evidently dilated by the drug; but this was the exception, proving the rule, as the case was not one of epilepsy or any convulsive disorder.

In the cases in which there appear to be a tendency in the fits to appear at regular intervals, for instance once a fortnight, Dr. Brown-Séquard prescribes quinine in large doses, *e. g.*, five, ten, and even fifteen grains, to be given at intervals, shortly before the fit is expected. By this means the fit is frequently prevented, and the patient goes on to the next, or even to a longer period. In reference to these large doses of quinine, it is well known that some temporary deafness will often follow, and curiously enough, Dr. Brown-Séquard states that there is a kind of deafness which the administration of this remedy in large doses will cure.

Another therapeutical means in epilepsy is the ligature, in cases in which the aura epileptica, arising from one of the limbs, is present. Dr. Brown-Séquard has two patients, both girls, about the age of nine years, in the hospital, in whom the fits are frequently stopped in this way. The ligature is kept constantly on the arm; when the child feels the warning, the nurse of the ward tightens the bandage, and the fit is prevented. It is of great consequence to have the ligature in readiness, so that it may be tightened at once. Grasping the limb tightly will do in the absence of proper means, but it is much better to keep a bandage or folded handkerchief tied on the arm ready to be tightened. Dr. Brown-Séquard has invented an

apparatus to encircle the arm, and to tighten by a screw, in order that the pressure may be quickly applied.

Dr. Brown-Séquard frequently uses the actual cautery locally in a variety of nervous affections. In epilepsy, patients frequently complain of either a pain or a sensation proceeding from some part of the body. A woman, aged twenty, had had fits for thirteen years; they invariably commenced with pain in the left side, just below the mamma. Dr. Brown-Séquard applied the cautery to this part in two or three places. The relief was most marked. It had not prevented the fits altogether, but it had reduced their number very considerably. Instead of having them every other day, she had them only once a week. The cauterising iron is heated to a white heat, and is then applied suddenly to the part once or twice. It appears to cause but trifling pain, and the patients do not seem at all to dread its repetition.

The following case, in which there was an aura starting from a small tumour in the forehead, the result of an old injury, has some interest.

Case.—George R—, æt. 35, a well-developed and stout man, but looking rather fatuous, came under Dr. Brown-Séquard's care on October 8th. His mother came with him, and from her were gathered the following particulars:—He had been epileptic for fifteen years. His seizures were of two kinds, which his mother distinguished by calling the slighter ones "shakings," and the more fully-developed ones "fits." Of the first he had two or three nearly every day, but occasionally missed a day. They come on with a general trembling, attended with paleness of the face, quick breathing, and a curious sensation (not of pain), which he refers to the pit of his stomach. The fits are preceded by a darting or pricking pain, commencing in a small tumour, about the size of a small bean, situated at or close to the left temporal ridge, about an inch from the external angular process of the frontal bone. He makes a noise which his mother calls a "sort of bark," and then becomes generally convulsed. He sometimes bites his tongue, but not always. The fits continue for twenty minutes, and are generally followed by sleep. It appeared on inquiry, that about the time of the commencement of the fits, at all events in the same year, he had an injury to the head in the position from which the aura starts. His mother's memory is so bad and his mind is so little developed, that neither of them can give a clear idea how far the date of the commencement of the fits and the receipt of the injury have reference to one another. His mother says that the pricking or darting pain in the forehead is always followed by a fit, although it may be six hours after. He is subject to bleeding at the nose, and this also is one of the signs which she regards as indicating the coming on of an attack. Dr. Brown-Séquard directed the man to take a mixture containing a quarter of a grain of the extract of belladonna, and two grains of quinine in two drachms of infusion of rhubarb, twice a day. The actual cautery was applied to the small spot mentioned. The patient came again on the 15th. He was much better, had had fewer "shakings" and no fits. His mother was pleased with his improvement, as he had gone through a long course of treatment with very little benefit. He was deeply tinged with the peculiar light plum-colour stains of nitrate of silver, which latter he had taken for a long time.

Dr. Brown-Séquard stated that if the patient should not continue to improve, or if he should relapse, he would then endeavour to destroy the

nervous connexion of the point from which the aura started by an incision one third round it on the side nearest the orbit; and if no improvement then followed, he would carry on the incision another third; and if still this isolation were not enough, he would continue the incision all round. But, he remarked, the result of this, if it were for a time completely successful, might not be permanent, and therefore he would advise the excision of a short piece of the frontal nerve, or the removal of the tumour. He gave the details of a case in which the excision of a tumour from the cheek was followed by cure for six months of spasm of the face, which had produced the most terrible suffering. It had been so constant and so distressing as almost entirely to prevent sleep.

Art. 39.—*Case of Anæsthesia, &c.* By Dr. J. W. Ogle.

(*Proc. of Roy. Med. and Chir. Soc.*, June 26, 1860.)

Case.—*Anæsthesia of almost the entire surface of the body, as well as partial loss of power, recurring several times, and traceable to the effects of effused products within the spinal canal upon the various spinal nerves.*

The case was that of a stonemason, aged thirty-two years, of intemperate habits, who rather suddenly lost the use of all his limbs to a certain degree, as well as sensation of the skin almost entirely. The affection began with feelings of "pins and needles" in the legs. There was no affection of the mental functions. Under treatment for eight or nine months, and the use of frequent blisters to the back, he became perfectly well; but since then, for five or six years, he has had a slight return of his illness every winter, which however did not prevent his working. He was admitted into St. George's Hospital with very diminished sensation of the skin of both legs as high as the thighs, as also of both arms up to the elbows, and of both cheeks and nose. There was no want of sensation in the skin of the forehead. The patient could walk, but in a very tottering manner; and the arms were much wanting in power. No pain complained of. Under the use of blistering the spine, and diuretics, chiefly the tincture of cantharides, he became in every way much improved, and was dismissed from the hospital greatly relieved. He subsequently returned stating that he had lost power in the limbs, and had been affected by numbness of the skin of the upper extremities. He complained of occasional pain in the head. He was again treated with the tincture of cantharides, and also with strychnine and bark. He was a second time dismissed without any numbness, and was able to work. Six months later he was again brought into St. George's Hospital in a very heavy and stupified condition, and with twitching of most of the muscles of the body. In this condition it was difficult to make out to what degree the sensation of the skin was affected, but it did not appear to be very much interfered with. The special senses were in a natural state; but the patient rambled when made to talk. He was cupped and purged. He became delirious, secreting objects under the bed-clothes. The pupils of both eyes were very contracted; and the trembling of the muscles became excessive. After a short time he became very irritable, and very angry if the skin of the limbs was

at all pinched, as if their sensation was exalted. He was seized with or by a convulsive attack and dyspnœa, and died rather suddenly.

Post-mortem examination.—It was found that the spinal membranes had been the seat of extensive effusion of "lymph," or albumino-fibrinous material. This had in many places accumulated around the roots of the spinal nerves, and was evidently chiefly of old standing. In some places the roots of the nerves were thickly and firmly bound by this material, and this it was no doubt which had given rise to the interference with the motion and sensation of the limbs and face. Moreover, a good deal of soft, yellowish, fibrinous material was met with at the base of the brain, occupying the subarchnoidean tissues, and surrounding the vessels and nerves there met with.

Dr. Ogle has had a coloured drawing made showing the presence of the effused material in contact with the spinal nerves, and also showing the microscopical appearance both of the spinal nerves and of the adventitious surrounding material.

ART. 40.—*Neuralgia, with Deafness, instantaneously cured by the extraction of a tooth.* By M. EDWARD VAUTIER.

(*Jour. de Méd. de Bordeaux*, June, 1860; and *Gaz. des Hôpitaux*, June 14, 1860.)

CASE.—The patient in this case was a very nervous, slender woman, who had suffered for about four months with intense neuralgic pains, radiating through almost all the teeth, and also the muscles of the anterior region of the left side of the head. There was constant lachrymation of the left eye, and from the moment of the attack complete deafness in the ear of the same side. A number of physicians had been consulted, and sulphate of quinia, flying blisters, and atropia, in succession, tried without giving relief.

When seen by Dr. B— she was suffering severely; had long been deprived of sleep, and could not chew her food. The teeth were examined with care, but no one could be found carious. The wisdom tooth on the left side seemed, however, slightly painful on being touched, and loose. She was advised to have this tooth extracted, but with some temper refused. However, some days afterwards, her physician again advising it, she consented, and the tooth was extracted by M. Vautier. The pains at once ceased, and her hearing was restored. A month has since elapsed without any return of her complaint. She seems to be permanently cured.

ART. 41.—*On Diphtheritic Paralysis.* By Professor TROUSSEAU.

(*Gaz. des Hôpitaux*, Nos. 1–5, 1860; *Medical Times and Gazette*, July 28, 1860.)

The following are some of the observations made by M. Trousseau during a clinical lecture delivered at the Hôtel-Dieu.

The subject of the lecture was a woman who, having been recently confined, contracted diphtheria from a patient in a neighbouring bed. Alum insufflations, and applications of hydrochloric acid, were resorted to, with the effect of removing all diphtheritic exudation. Already on the tenth day, however, she spoke markedly through the nose, and deglutition was very difficult, and accompanied by nasal regurgitation. A notable proportion of albumen was also found in the

urine, indicating the rapid degeneration of the local into a general affection. The paralytic lesion of the pharynx kept increasing, so that by the twenty-fifth or thirtieth day the woman could no longer swallow, and was like to have died while trying to take some solids. About the fortieth day some improvement in this respect took place, but now numbness of the hands and feet was observed, as well as defective pronunciation from imperfect movement of the tongue. By the fiftieth day progression had become uncertain, and general nervous symptoms, chiefly consisting in delirium and convulsions, set in. The worst apprehensions were now entertained; but musk having been administered, some improvement took place. So considerable, however, was the paralysis, that the patient could not raise herself without the assistance of two nurses. The bladder was also affected during two or three days, but not so the rectum. With this paralytic condition complete anæsthesia co-existed, the patient remaining absolutely insensible to pricking with needles. At the present time (150th day) the symptoms have so ameliorated under the use of syrup of sulphate of strychnia, that the patient can now get in and out of bed easily, can knit a little, and is able to distinguish between wool and cotton by the touch. No disturbance of visual powers has taken place, although during six weeks enormous quantities of albumen have been found in the urine. One circumstance worthy of note is the remarkable alternations which were observed—sometimes one limb, and sometimes another, being affected to-day and well to-morrow, to again become suddenly bad again, and so on; and as this is of common occurrence in diphtheritic paralysis, we may justly conclude that the lesion of the nervous centres is not of a very grave character.

Is diphtheritic paralysis a new disease? Those of my hearers who commenced their studies some years ago must have become struck with the sudden predominance of new pathological conditions. During the last thirty years we have seen several of these so-called new diseases, such as Bell's disease, or facial paralysis; Bright's disease, or albuminuria; leucocythemia, or Virchow and Bennett's disease; endocarditis, or Bouilland's disease; affections of the supra-renal capsules, or Addison's disease, &c. Since the period when Calmeil published his admirable work on epilepsy, how common has this terrible neurosis become, while forty or fifty years ago it was comparatively a rare affection. Thirty years since the cholera was unknown in English and French India. The plague, still so common in certain regions, tends to completely disappear in others. Variola, pertussis, and scarlatina, which at a very remote epoch prevailed in great intensity, and later had almost disappeared, have been in their turns as new diseases. M. Broca, while *interne* to Blandin at the Hôtel-Dieu, never failed, when examining the bodies of those who died of purulent infection, to detect suppuration of the veins. He states, however, that at the present time he finds such phlebitis quite an exceptional occurrence. At the beginning of 1859, M. Delpech observed an epidemic of puerperal fever at the Maternité, in which suppurative fever was the marked characteristic, pus being deposited in the veins and as metastatic abscesses, while there was scarcely any pain in the hypogastrium. In another epidemic, at the end of the year, on the contrary, it was

puerperal peritonitis which carried off the patients. In medicine as well as in surgery there are peculiar physiognomies of diseases; one revolution, the intimate essence of which escapes us, brings them on, another dissipates them, and a third re-establishes them.

As to diphtheritic paralysis it is probable that it has never been so prevalent as within the last two or three years. M. Trousseau has performed the operation of tracheotomy successfully on sixty children (out of 250 operations), and in only two of this number have general phenomena, analogous to those in question, been observed. Diphtheria itself, indeed, has of late years taken on an altered physiognomy, for in place of invading the pharynx, and proceeding slowly towards the larynx, it now becomes generalised with a terrible facility, prostrating the patients, and delivering them up to the mercy of nervous accidents of the highest intensity. "I never witnessed such cases with Bretonneau, although my master subsequently signalised these manifestations of a novel malignity."

In answer to the question whether a simple angina may not sometimes lead to a paralysis, M. Trousseau adduces some cases in which paralysis of the velum seems to have followed it; but when the paralysis has become more generalised, he suspects that it may be due to diphtheritic influence, although this may not have been accompanied by its usual local manifestations—just as is the case with instances of scarlatina, accompanied by little or no eruption.

In 1771 Samuel Bard described a case of aphonia following diphtheria, and Bretonneau reporting this fact in 1826 stated that he then had met with nothing analogous to it; but in 1843 he witnessed the production of paralysis of the extremities following diphtheria in the person of M. Herpin, a surgeon of Tours, who had contracted the disease in consequence of some of the false membranes from the throat of a patient which he was syringing gaining access to his nostril. Since that time, M. Trousseau has paid much attention to this complication; but believing at first that the paralysis of the velum might be due to muscular inflammation, it was not until 1853 or 1854 that he definitively drew the attention of practitioners to the fact that the paralysis really depends upon a more general condition, and that it is in fact one of the effects of the poisoning of the entire economy by the diphtheria. M. Maingault has especially of late done most towards the elucidation of this disease, which has not only multiplied itself at the Children's and St. Eugenie Hospitals, but has become so common in private practice, and perhaps there is not a single practitioner in Paris who has not seen one or more cases.

Although in general the very varied paralytic symptoms in diphtheria may cease, even without the intervention of medicine, at the end of two, three, four, or six months, there are other cases in which death may be the result, or the paraplegia may become more enduring. Examples of this are adduced by M. Trousseau from his own practice. In some cases death has resulted from the mere difficulty in swallowing.

As to the nature of this paralysis, it is evident that it is not dependent upon a material lesion of the brain, as this would be inconsistent with the versatility of symptoms observed, and with its fre-

quent curability. It is presumable that there is something analogous to what is observed in certain cachexias. In Bright's disease paralytic phenomena are also observed, and the amaurosis in that affection has been well made out and described by M. Laudonzy and others. One very remarkable circumstance in diphtheritic paralysis is the temporary extinction of venereal desires, which occurs at a very early period, even in those possessed of considerable genital ardour. In various other serious pathological conditions, especially phthisis, the patients long preserve their copulative aptitudes. M. Trousseau referred to other instances of paralysis, analogous to those now in question, occasionally observed after feeding on certain poisonous fish, after typhoid or variola, after asphyxia from charcoal vapours, and after the manipulation of sulphuret of carbon in the vulcanized caoutchouc factories (where also both men and women experience venereal frigidity).

In the treatment of paralysis consecutive to diphtheria, while combating the local condition, we must especially endeavour to restore the patient's strength. Bark in all its forms, iron (especially the syrup of the ammoniacal citrate or the perchloride), bitters, animalized and nutritious diet, exposure to the fresh air, dry frictions along the spine, aromatic and stimulant lotions, and sulphureous baths, comprise our most precious resources. Preparations of nux vomica, and especially the syrup of the sulphate of strychnia, act as general stimuli, arousing the muscular contractility, and may, on occasions, render good service. In spite of these and all other means, it must always be borne in mind that diphtheritic paralysis is an affection of considerable duration.

ART. 42.—*A case of Saturnine Paralysis.* By Dr. CHARLES TAYLOR.

(*Medical Times and Gazette*, Aug. 11, 1860.)

CASE.—W. H. G—, male, æt. 47, married, a ship captain, came under my care on December 14th, 1859—a melancholy-looking, emaciated man, with cadaverous complexion and yellow conjunctivæ, vascular and respiratory organs normal, functions of abdominal viscera well performed; pulse 65, tongue moist, steadily protruded, no defect of articulation, skin clammy, senses and sensibility normal; gait steady. The breath has a peculiar fetor, and the gums are marked with a blue line at their junction with the teeth. Urine loaded with lithates, free from albumen, and yielding, on analysis, a trace of lead. States that he has had good health all his life, with the exception of an attack of fever, which occurred twenty years ago. It is upwards of a year and a half since he left the sea, and resided at Egremont, where his wife and himself habitually used rain-water that was stored in a leaden cistern. The effects of this water (which I found on examination to contain lead) were developed in both cases within seven months, when my patient began to feel ill, complaining of loss of appetite, dull gnawing pain in the epigastric region, succeeded by vomiting and obstinately constipated bowels. Two or three medical gentlemen were consulted; but not improving, he applied to the Northern Hospital, and on September 8th, 1859, was admitted into the Royal Infirmary, where he remained upwards of two months. The principal symptoms were relieved by the treatment adopted, and he was dis-

charged at the end of that time, suffering from complete wrist-drop of both hands.

On desiring the patient to stretch out the superior extremities, the wrists fall in a straight line, and are neither adducted or abducted (indicating equal paralysis of the extensor carpi ulnaris and extensor carpi radialis). In this position he finds it impossible to extend the fingers, but on supporting the first phalanges, the second and third are readily extended by the interossei and lumbricales muscles. The forearms generally are emaciated, and the thenar and hypothenar eminences are atrophied to a marked degree. He states that complete wrist-drop has existed for six months. On proceeding to ascertain the effect of the electric current on the paralysed muscles, I found the whole of the superficial layer of the posterior brachial region unaffected by the most powerful current, with the exception of the anconeous and supinator longus, in which the excitability was normal. Of the deep layer the supinator brevis was the only muscle on the right side that preserved its contractility; but on the left the extensor ossis metacarpi pollicis, extensor primi internodii, and extensor secundi internodii pollicis, in addition, acted readily. These and the supinators of both arms were also subject to the will. The muscles of the anterior brachial region acted well, as did, to a less degree, those of the thenar and hypothenar eminences, while in the palmar regions, the interossei and lumbricales preserved their electro-muscular contractility.

I commenced the treatment on December 14th, 1859, by passing a strong rapidly interrupted current, from primary and secondary wires, through each paralysed muscle in the posterior brachial region, for the space of two or three minutes; and this operation, with occasional omissions, which it is needless to detail, was repeated thrice weekly up to February 20th, 1860, when the natural tension and voluntary motion in these muscles was restored, although they still remained quite unaffected by the most powerful Faradic current. Those of the hand were not subjected to the electric stimulus, and remained in much the same condition, although slightly improved.

This case appears to me to present some points of interest, to which I will briefly call attention:

1. The atrophy and paralysis of the muscles of the thenar eminences in both hands, as a result of the imbibition of lead, is worthy of note, as being opposed to a recent observation of Dr. Duchenne, of Boulogne, who attributes this atrophy, as formerly noticed by writers on saturnine disease, to the compression exercised by the handle of the paint-brush, in that class of workmen most frequently the subject of the affection. He says: "Je viens de dire que les muscles de la main ne sont pas ordinairement atteints par le poison. Il est vrai que j'ai vu deux ou trois fois les muscles de l'éminence thénar considérablement atrophiés du côté droit, chez des peintres atteints de paralysie saturnine, les muscles, quand ils ne sont pas entièrement transformés, conservent leur contractilité électrique. J'attribue cette atrophie à la compression exercée par le manche de la brosse, et non à l'influence toxique du plomb."

2. The exemption of the supinators, although receiving their nervous supply from the same source as the affected muscles, is almost constant in these cases, although I have seen the contrary stated; but the fact that the three extensors of the thumb were paralysed only on one side is somewhat singular, and worthy of note.

3. The subjection of muscles to the influence of the will by frequent applications of the electric current, although still rebellious to the most powerful shocks of that agent, is a singular fact that has been noticed by

Duchenne and others, and might be a means of enabling us to diagnose pre-existing lead disease after recovery of the patient.

4. The return of voluntary power in the wasted and completely paralysed muscles, by the treatment adopted, while those only partially affected, and not subjected to the electric stimulus, remained in *statu quo*, is illustrative of the value of Faradism as a therapeutic agent in such cases.

5. The ease with which the electric stimulus may be localized in deep-seated parts was well illustrated by this case, as I could readily pass a current through the superficial and deep layer of insensible extensors, causing violent contraction of the excitable flexors on the other side of the arm.

6. I beg also to direct particular attention to the value of elastic straps in supporting the hand, in patients suffering from saturnine paralysis. The idea of employing these substitutes for splints was original, and I, at the time, believed it to be a novel contrivance. I learned, however, subsequently, that Dr. Inman had used an instrument precisely similar four years ago, which he described in the first volume of the Liverpool 'Medico-Chirurgical Transactions;' nevertheless, although vastly superior to splints, it does not appear to be generally known. I may, therefore, mention that it consists simply of a piece of flat elastic, stitched by one end to the back of an ordinary glove, the other being tied by tape above the elbow; it costs a few pence only, and when applied, effectually supports the wrist, and permits the extensors to be exercised in proportion to their power; it does not interfere with the action of the flexors, and by the support afforded to the first phalanges materially facilitates free play of the second and third. Its contractile nature also assists the patient in voluntary efforts to move the paralysed muscles, while *gymnastique nerveuse* to no slight degree aids in their restoration.



The accompanying sketch is from a photograph, showing these supports in operation.

ART. 43.—*On a form of Paralysis of the Lower Extremities prevailing in Allahabad.* By Dr. IRVING, Civil Surgeon of Allahabad.

(*Indian Annals of Med. Science*, July, 1859.)

"In October, 1856," says Dr. Irving, "Mr. Court, the Collector of Allahabad, when in Pergunnah Barra, on the right bank of the Jumna, was very forcibly struck by the number of lame persons whom he met in all directions. On inquiry he found, in village after village, that there were several cripples in each. He was also informed that the disease which gave rise to this lameness was of recent origin, and that it was attributed by some of the people to their living on bread made from *kessaree dâl*, and by others of them to the unwholesome qualities of the wind and water of the Pergunnah; the latter being vague causes of disease ever ready to be brought forward by the natives in order to account for any unusual or unintelligible sickness. Several cases of paralysis of the lower limbs were sent from Barra, to the Government Charitable Dispensary at Allahabad, for medical treatment. Unfortunately, however, they got tired of the means employed for their cure, and left after being in hospital for a month or five weeks. But, through the kindness of Mr. Court, who accompanied me to Barra, I was enabled to make some few inquiries into the nature and history of the malady.

"Close to the village of Kheerut Gohanee, on the Sohagee Road, all the lame people from surrounding villages were mustered for my inspection on the morning of the 6th of February, 1857. About fifty men were present, all more or less lame in both legs; some so much disabled as to be hardly capable of motion, while others were only slightly affected. One after another was questioned, and the following particulars were thus gathered. Without exception they all stated that they had become paralytic during the rains; in most cases suddenly so; and several stated that it had been during the night. Men, who had gone to bed quite well, had awoke in the morning feeling their legs stiff and their loins weak, and, from that day, they had never regained the use of their limbs. At first, the lameness was trifling, and amounted only to unsteadiness of gait and slight stiffness chiefly of the knees. After a time the muscles of the thighs commenced to ache and feel weak, and also the loins. In no case did those examined admit that they had then, or ever had, severe pain either in their limbs or loins. They all ascribed their disease to their feeding principally on *kessaree dâl*, but they seemed to imagine that, in order to produce the malady, there must be another circumstance superadded, viz., the deleterious quality of the water during the rains. So far as could be gathered, it was not from drinking the water that they fancied they took harm, but from getting wet by it. More than one dwelt on the fact of his having been exposed to rain, either while ploughing or tending sheep; and others spoke of having been working in jheels just before they became lame, at various periods embraced between the months of July and October. The people were particularly examined, and questioned as to whether they had had

any symptoms of fever, or of any other disease at the time that they lost the use of their limbs, but they all said that they had not, and nothing was discovered to lead to the inference that this was not strictly true. In only one of many cases examined was enlargement of the spleen observed. Many of the men appeared to be strong-looking, and their legs even, in most cases, did not seem to be much wasted, if at all so. It was stated by those affected, as well as by several native officials who were interrogated on the subject, that the complaint did not lead to other diseases, nor tend to shorten life, unless indirectly by preventing the individual working, and thus procuring proper means of support. It was further stated, that the arms were never affected; but that there were some few cases of persons so greatly crippled that they could not walk. It was added, that males were more often afflicted than females; and that ryots were more liable to the disease than the zemindars, although the latter class was not exempt from it."

These paralytic symptoms are very generally attributed by the natives to the use, as food, of the *kessaree dâl*, the *Lathyrus sativus* of English botanists, a species of vetch. This plant is frequently sown along with wheat or barley, and cut green as fodder for cattle; but it is also ground and made into bread, mixed with wheat or barley-meal, or not, as the case may be, in the districts where the paralysis under consideration prevails. The *kessaree dâl* is much cheaper than wheat, and hence its use. It is said that horses and bullocks fed on kessaree lose the use of their limbs.

"In Europe also, paralysis of the lower limbs has been observed to follow the use of *Lathyrus sativus* as an article of food. Thus Don, in the Gardener's Dictionary says, that the flour of this plant, mixed with wheat flour, in half the quantity, makes very good bread, but alone produces surprising rigidity of the limbs in those who use it for a continuance. In the same quarter of the globe similar effects have also been observed to follow the eating of other kinds of grain produced by the same great natural order of plants, the Fabiaceæ, to which the *Lathyrus sativus* belongs; as well as other species of the same genus. Thus Dr. Taylor alludes to *Lathyrus cicera* and *Ervum Ervilia* (bitter vetch), as occasionally rendering bread poisonous. In some part of the Continent, a bread is made from the flour of the *Lathyrus*, which is so injurious in its effects, that the use of it has frequently caused its prohibition by law. Loudon states, that when mixed in equal parts with wheaten flour it makes a good-looking bread, which, however, occasionally gives rise to weakness of the knees and spasmodic contractions of the muscles. Cattle and birds, when fed on the seeds, are said to become paralysed. A more recent example of the poisonous effects of *Lathyrus cicera* flour is furnished by M. Vilmorin; he remarked that 'the use of this bread for a few weeks produced complete paralysis of the lower extremities in a young and healthy man. Six or seven individuals of the same family, who had eaten it, suffered more or less from similar symptoms, and one had died. A physician who practised in the district remarked, that paralytic affections were very common among the poor, who subsisted on this bread, while they rarely occurred among the better

classes. When the *Lathyrus* flour formed one twelfth part, no inconvenience was observed to attend its use; in a proportion greater than this it becomes injurious; and when it amounted to one third part, the effects might be serious.' (Ann. d. Hyg., Avril, 1847, p. 469—Taylor on Poisons, p. 536.) Dr. Lindley also states, that the seeds of *Ervum Ervilia*, mixed with flour and made into bread, produce weakness of the extremities, especially of the limbs, and render horses almost paralytic."

It is to be observed that the ground is swampy in the neighbourhood where the paralysis prevails, and that the water used is highly impregnated with saline ingredients.

ART. 44.—*The treatment of Paralysis by Motion.*
By Dr. CHARLES F. TAYLOR.

(*Amer. Med. Monthly*, May, 1860.)

CASE.—In December, 1858, Master D. F—, æt. 10, was brought to me from the country, with hemiplegia of the left side. Five years before, that is, when he was five years old, he was kicked by a horse, in the right fronto-parietal region, detaching a portion of the skull about two by three inches large, depressing and forcing it under the adjacent parts, and considerably lacerating the brain-substance. The shattered bone was removed with difficulty, and after twenty-four hours, when consciousness returned, he was found to be paralysed in the left side. It was nearly a year before the wound had healed, during which time, according to the history of the case, a "fungus" (?) was removed from, and an abscess had formed on the wound. At the end of a year, he was well, except the paralysis, which remained nearly unaltered till I saw him, but for the past year, was rather growing worse. He had no use of the left arm, could only move it imperfectly at the shoulder and elbow; walked with difficulty, and could not support more than one fourth or one fifth of the weight of the body on the left leg. There was imperfect development over the whole left side; the chest was sunken on that side, and the muscles soft and small.

After treatment of three months (unhappily stopped, at that time, from an attack of gastritis), there was a remarkable increase of strength, and of voluntary control over the muscles, so that he could stand on the left foot for fifteen minutes; could climb a ladder, using both hands; and there was evident increase of muscular development through the whole side.

Just one year from the time he commenced, namely, in December, 1859, he resumed his treatment at my office. The development which had begun the year before had kept steadily on. The chest and shoulders were symmetrical, so that the wadding before placed on the left side of his coat to make the shoulders appear even, had to be entirely removed; and he was stronger throughout that side. But here comes the most interesting part, so far as treatment is concerned. I observed in his case what I have observed in many other cases, that while the muscles might be brought under the *control* of the will, while they would act correctly and strongly, they would not act *readily*. In this case, though the muscles of the left leg were strong and would move as wished, they would act only tardily.

He had muscular strength enough to walk without limping, yet he limped, When he stepped with that foot, there seemed to be an interval of time after the effort before the action. The leg would partially give way for a moment,

under the weight of the body, before the muscles would contract so as to sustain him firmly upon it. And yet, when this contraction did take place, it was sufficiently powerful. Hence the conclusion, that in the physiology of muscular motion there is a difference between certainty and readiness of action.

It occurred to me, that as we can develop certainty of action by concentrating the will upon a part and *prolonging* this effort, we might secure rapidity of action by *sudden* efforts thus concentrated. I therefore adopted a system of movements involving sudden *explosions* (as it were) of effort upon the affected parts. This process was kept up for two months, with more than anticipated results. He gained nothing in strength or certainty of movement, but in readiness and rapidity of muscular action there was as much improvement as there had been before in control of it. He can now walk with scarcely a perceptible difference in quality of movement in the two sides.

Muscular contraction follows immediately upon the effort, so that the settling down of the left side in walking, before so marked, is scarcely perceptible.

The principle of distinguishing between the different qualities of force and the peculiar kind of functional manifestation to be employed in order to secure it, has been applied in many other cases with uniformly favorable results. Another important matter in the treatment of paralysis is, to secure a good circulation of blood in the affected parts before attempting to reach voluntary motion in them. Innervation as well as muscular contraction take place only in the presence of arterial blood. Before the patient essays to move a paralysed limb, especially at the beginning of treatment, the muscles should be stretched (passively), or made to act through position and reflex action (as standing on a paralysed leg, for instance, while held in position by assistants); and one is often surprised to notice how readily the previously rigid muscles will move in obedience to a volition.

Out of over forty cases which I have treated during the last three years, more than three fourths have shown marked improvement; but the most favorable of all have been those unfortunate cases of "withered limbs" in children, occurring from teething (inanition), fevers, falls, &c., when quite young.

ART. 45.—*On the use of the Ophthalmoscope as a help to diagnosis in diseases of the nervous system.* By Dr. J. W. OGLE, Assistant-Physician to St. George's Hospital.

(*Medical Times and Gazette*, June 9, 1860.)

Dr. Ogle considers that the condition of the deeply seated and delicate vessels of the eyeball may be, as it were, to a great extent (at least in some instances) a criterion of the state of the vessels within the cranium; and he relates four cases, of which we give one, with the concluding remarks:

CASE 4.—P. R—, æt. 38, with a well-marked intra-thoracic aneurism, situated towards the *right* and upper part of the chest. The pupil of the *right* eye was much larger than that of the left one, but both act equally well, and are regular in outline. Thinking that this difference between the pupils depended upon some interference with the sympathetic nerve, and that probably from the same cause, the innervation of the vessels of the fundus of the eye might be affected,

the eyes were examined by the ophthalmoscope, "numbers of darkish spots and specks (apparently the *débris* of ecchymosed blood) were seen on the field of the retina. There was no increased sensibility to the stimulus of light."

"Such," says Dr. Ogle, "are the cases which I thought it would be of interest and serviceable to bring forward as demonstrating the use of the ophthalmoscope in affections of the nervous system. I hope I may, at a later opportunity, be permitted to adduce still others, and again, perhaps, to refer to the above as being still under observation. I will make no further comment on the results of the ophthalmoscopic examination in the above instances, so far as they are for any important deduction, excepting to draw special attention to the great sensitiveness of the retina (as the acute pain showed) in Case No. 4, that viz. in which there was paralysis of the third cranial nerve on the right side. This symptom in such a case appears to be of great interest, and I do not recollect to have noticed it in any previous instance of this affection.

"In conclusion, I would observe that no doubt in some cases the application of the ophthalmoscope may be instrumental in diagnosing (a matter so difficult, but so necessary) between giddiness and other symptoms proceeding from actual organic change, and the same symptoms arising from disturbance in other distinct parts, as in the digestive organs, and, therefore, strictly sympathetic in character. Again, it may prove useful as a means of diagnosis, when it is doubtful (especially in children, parturient women, &c.) whether such and such symptoms are owing to *repletion* or to *defective* and even sinking powers, just as the state of the fontanelles is looked upon as being a useful guide in such doubtful instances. Might not the entire subject be greatly furthered, and much light thrown upon it, by judicious experiments on some of the lower animals; different conditions of the cerebral capillary system being artificially produced for the sake of contrasting different conditions of the vessels of the choroid and retina?"

ART. 46.—*Electricity as a means of ascertaining the gravity of Traumatic Paralysis.* By M. NÉLATON.

(*Journ. of Pract. Med. and Surg.*, Aug., 1860.)

It was formerly supposed that the paralysis which frequently accompanies dislocations of the shoulder was peculiar to the deltoid muscle, and consequent on the stretching or contusion of the circumflex nerve during the displacement of the bone. A more careful clinical inquiry into the nature of the injury has, however, shown that other muscles besides the deltoid are subject to this loss of power, although the fall which caused the disease may not necessarily have occasioned either fracture or dislocation. The muscles supplied by the radial nerve are sometimes alone affected, and occasionally those which receive the filaments of the ulnar and median. It may further be remarked, that this form of paralysis results from the pressure exercised upon the brachial plexus, closely embraced between the first rib and the clavicle,

which is very moveable; therefore certain nerves or nervous filaments will readily be conceived to escape compression, and partial or incomplete loss of power to be thus induced.

An illustration of this sort of paralysis was afforded at the hospital of the School of Medicine, by a man who, in a fall from a considerable height, had dislocated his shoulder. The luxation was reduced with ease, and the arm kept for a fortnight perfectly steady and immovable; but when the patient attempted to use the injured extremity, he found that abduction of the limb was utterly impossible; not that the dislocation had not been well reduced, or that a fracture of the acromion or collar-bone had taken place, but because the deltoid muscle was paralysed by the mechanism above described. In this kind of injury it is interesting to know that electricity supplies us with the means of ascertaining readily whether or not the paralysis is likely to be of long duration. For this purpose the muscular contractility should be tested with the wet sponge attached to a conductor, and if the muscle responds to electric influence, a cure will certainly be effected in the course of two or three months; but, in the contrary case, the prognosis is very serious. It has been stated, it is true, that even after atrophy a muscle might revive; but this, in M. Nélaton's opinion, is very rare, the converse being far more probable, In the case under consideration, paralysis had lasted fifty days; electricity was resorted to, the muscle obeyed its influence, and a favorable prognosis, which the future course of the disease has since justified, was pronounced. The man had been admitted into hospital on the eighth; on the ninth electricity was applied for the first time, for the purpose of diagnosis, and was continued up to the fifteenth, as a means of treatment. On the sixteenth, the power of abduction had feebly but distinctly returned; the limb could be raised from the side, and when the arm was horizontally extended, it preserved this attitude for several seconds without support.

This case, and others of a similar description, which we have recorded, show that in traumatic paralysis inductive electricity is a valuable resource, and may be considered one of the most felicitous applications of this power in surgical practice.

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 47.—*On the treatment of Pneumonia by Veratria.* By Dr. VOGT.

(*Bull. Gén. de Thér.*, Jan., 1860; and *Med.-Chir. Rev.*, July, 1860.)

In a work lately published, Professor Vogt, of Berne, gives the results of his experience in the treatment of pneumonia by veratria. The number of cases treated from the beginning of 1857 to the end of March, 1859, was 56. Of these, 29 were cases treated in the first stage, 2 only being fatal. In the remaining 27 cases the properties of veratria were very strongly marked. On the fifth day of the disease the fever had generally disappeared, and the patients were becoming convalescent. Only in a small number of cases, towards

the fifth or sixth day, there was a fresh exacerbation, but all the phenomena disappeared more rapidly than before by a fresh administration or a larger dose of veratria. In no case had the veratria any other effect upon the local lesion than that of suspending its progress as soon as the febrile excitement was arrested. In a second class of cases there were 22 in which the disease had passed the first period and presented itself with a fresh exacerbation; of these, 2 died. Considering this treatment in a general manner, M. Vogt observes, that when applied to well-developed and serious cases of pneumonia, veratria has afforded very satisfactory results, as there were only 8 fatal cases out of 100; and his opinion is that the use of this drug ought not only to be ranked upon an equality with other approved methods of treatment, but that it is actually superior to them. The objection has been raised against the use of veratria, that it often readily produces vomiting, and it has also been alleged that its action often becomes excessive. But M. Vogt does not consider these objections as having much weight; for as to its emetic powers, it possesses them in common with tartarized antimony, and ordinary experience proves the utility of vomiting in a number of affections of an inflammatory nature. As to the activity of its operation, it may be moderated by regulating the dose, and by carefully watching the effects produced, as in the case of other medicines. In small doses it has no action on the pulse, and in sufficient doses it never acts excessively, according to M. Vogt, when it is administered with suitable precautions. The rules laid down by M. Vogt are, to give the veratria in a rather large dose—namely, 5 milligrammes (a milligramme is ·0154 of an English grain) every two or three hours, until the production of vomiting or the diminution of the pulse. The veratria is generally administered in pills; but some persons are unable to swallow pills, and the alkaloid must then be given in solution. The necessary dose for procuring the desired effect is from 25 to 30 milligrammes; but there are persons of less sensitive organization, principally men, in whom as much as 5 to 6 centigrammes (a centigramme is ·1543 of an English grain) may be given in twenty-four hours. If the stomach is too irritable, the dose is reduced, and the veratria is administered in an effervescing draught or with a little opium; the action of the pulse is more slow in developing itself, but it is nevertheless observed at last.

ART. 48.—*Report of twenty-four cases of Tracheotomy in the last stage of Croup.* By Dr. FOCK.

(*Deutsche Klinik*, 1859; and *Med.-Chir. Review*, July, 1860.)

In this paper Dr. Fock gives an account of the cases of tracheotomy for croup which have occurred in his practice, and in that of his colleagues, at the Magdeburg Hospital. He observes that, notwithstanding some of the leading practitioners in Germany—such as Langenbeck, Baum, Roser, and Bardleben—resort to the operation, and recommend it in their lectures, it has obtained no general admission into German practice. Of these twenty-four cases, ten were

successful, the particulars of both these and the unsuccessful cases being exhibited in a tabular form. To this statement Dr. Fock appends some observations.

1. These cases are decidedly in favour of the operation, inasmuch as it was not resorted to until a stage of the disease when death seemed quite inevitable without it, notwithstanding the persevering employment of the various remedies. The saving ten out of twenty-four children, apparently absolutely condemned to die, cannot be regarded as other than a great success. It is not desired to draw from these facts the conclusion that the operation should be resorted to in every desperate case of croup, although it is very difficult to indicate in which of such cases it should be abstained from. It would be a mistake to estimate the degree of danger alone from the amount of dyspnœa; for even when this becomes suffocative during the operation, success may yet be the result. As a general rule, it may be stated that the most favorable prognosis may be delivered in those cases which exhibit themselves from the first as pure croup, and are attended by constantly increasing paroxysms of dyspnœa; while the contrary is the case when there has been a preliminary bronchial catarrh during several days, and when the child, after seeming to be in a state without any peril, suddenly passes into a condition of actual croup. Either, on account of the small quantity of air which enters through the contracted larynx, no bronchial *râle* is produced, or its existence is marked by the laryngeal sounds. The operation is resorted to, and the child in all probability dies with bronchitis and pulmonary œdema. When accompanying the croup, too, a wide-spread bronchitis is observable, the dyspnœa may be more dependent upon the latter than upon the obstruction of the larynx. Pulmonary œdema is probably already present, and death will take place within twenty-four hours after the operation. The difficulty in the performance of auscultation and percussion in these cases is sometimes immense, and may amount to an impossibility. In such instances we can only fall back on the history, and remember that cases of croup in which the disease has become developed with rapidity and violence are more favorable for the operation than those in which it has for some days been preceded by catarrh. In the latter cases the operation should be declined. Again, the prognosis has always been, within the author's experience, of a favorable character when the depression below the larynx and at the epigastrium become very marked during the inspiration. The exaggerated actions of the inspiratory muscles, especially the accessories, augment such depressions much when the lungs are entirely free, and the obstacle is only placed in the larynx; but the smaller amount of such depression is quite remarkable when there is co-existing pneumonia, extensive bronchitis, or pulmonary œdema. In such cases the probabilities of success are too small to warrant our undertaking an operation. Lastly, the constitution should influence our prognosis. It is decidedly more favorable in thin, long-necked children, than in those of an opposite conformation. In determining whether we shall operate in a given case, we have to ascertain whether the after-treatment, as regards watchfulness, skilful nursing, &c., can be secured—matters which, however easily provided for in a large town,

and in a hospital, may not be attainable in a country district; and yet upon them the result may entirely depend.

2. As to the operation itself, the reporter enters into the details and the difficulties of its performance, which we need not repeat. He says he always resorts to chloroform, which renders the operation far more easy of performance; and he has never, even in extreme dyspnœa, found any ill effect to result from its employment. At first the dyspnœa is increased by the inhalation, but the narcosis is speedily established, and then the breathing becomes much calmer than before.

ART. 49.—*On the treatment of Hooping Cough by increasing doses of Sulphate of Zinc and extract of Belladonna.* By Dr. FULLER, Physician to St. George's Hospital, &c.

(*Lancet*, July 28, 1860.)

After referring to the discovery he had made as to the tolerance of belladonna by children ('Abstract,' XXXI, 344), he proceeds to state that he has brought this fact to bear upon the treatment of hooping cough, and that he has obtained results exceeding his most sanguine expectations, from the conjoint use of extract of belladonna and sulphate of zinc (of the beneficial influence of which he already had sufficient proof) in rapidly increasing doses. Rarely had he found the whoop to last above twenty-one days, and in some instances it had subsided in ten days. The mode in which Dr. Fuller proceeds is to give the zinc and belladonna as soon as the whoop declares itself. If the attack is accompanied by much febrile excitement and bronchitic irritation, he prescribes a cough-drop containing a drachm of antimonial wine and a drachm of ipecacuanha wine to two ounces of water, and, if necessary, applies a blister to the chest. Of the cough-drop a larger or smaller amount is given, according to circumstances. In all cases, however, the zinc and belladonna are administered perseveringly. To children under three years of age he usually begins by giving one sixth of a grain of extract of belladonna and half a grain of sulphate of zinc four times daily, and to children above that age a quarter of a grain of extract of belladonna and a grain of sulphate of zinc. The remedies are given in solution in water, and the dose of each substance is increased by a corresponding dose daily or on alternate days, so that the child who began by taking a quarter of a grain of the extract and one grain of zinc at a dose would be taking one grain of the extract and four grains of zinc at a dose either on the fourth, sixth, or eighth day, according to the rapidity with which the dose is increased.

Dr. Fuller concludes by citing cases illustrative of the value of the treatment recommended, and by urging its general adoption.

ART. 50.—*An inquiry into the Curability of Consumption, the prevention, and the progress of improvement in the treatment.* By Dr. JAMES TURNBULL, Physician to the Liverpool Royal Infirmary. (Third edition.)

(8vo, London, Churchill, pp. 195, 1859.)

The great object in this work is to show that consumption is a disease much more under the control of means which we have in our power than is generally supposed, and in this the author has all our sympathies. He has our sympathies, also, in what is said about the causes, the symptoms and signs, the varieties, the curability, and the relation to other diseases, of consumption. What is said is just what a well-informed and sensible man may be expected to say, and, in essential particulars, the treatment recommended is also that which at the present time is carried out by the majority of practitioners in this country—cod-liver oil, and proper hygienic measures, being the prominent items. The cases upon which we are required to be more hopeful in our prognosis are nineteen in number, and of these Dr. Turnbull speaks as follows:

"Of these nineteen cases there are fifteen of which an account has been already published; and one other, formerly published along with these, has been inserted in the first part of this chapter, at page 95. Two of them died after the disease had been arrested for a time, but I know, from recent positive information, that more than half of them are now alive; and no doubt several of the others, of whom I have not lately heard.

"In the first case the disease was in the early stage, before any softening and disorganization of the lung had occurred; recovery seemed to be complete, and the patient having continued well, there is good reason to expect that it may be permanent. In the second, a degree of dulness, indicating a very considerable amount of consolidation, was almost entirely removed, and the general health perfectly restored for nearly two years and a half; and as this occurred at an early period of life, when tubercular disease does not commonly attack the lungs, there is sufficient ground to believe that the judicious use of hygienic means and prophylactic treatment may enable the child to outgrow the tubercular tendency altogether. In the third, the disease had not gone beyond the first stage; but remaining dulness showed that there was pulmonary induration, or partially absorbed tubercular matter, which may have undergone cretaceous transformation. In other respects, however, recovery has continued most perfect, and there is good reason now to believe that, with ordinary care on the part of the patient, it will prove permanent. In the fourth, the tubercular matter had probably become cretaceous, recovery was very good; and as the period of life of the patient—above fifty years of age—lessens the activity of the tubercular tendency, there is reason to expect that due care might at least prevent its renewal for an indefinite period. In the fifth, the disease was in the first stage; and a very perfect and continued recovery has been effected. The sixth was a case where the slow progress of the disease, and the fact

of it being arrested in the first stage, were looked upon as grounds for hope; whilst on the other hand the natural delicacy of constitution was considered as a reason for fear that slight exciting causes might rekindle the activity of the tubercular deposit, but so far it has been groundless. The seventh and eighth are cases where the amount of the tubercular deposit was small; and it is probable that it has been absorbed or become cretaceous. The health is so good in the eighth, that the recovery may now be reasonably looked upon as permanent. In the ninth, the disease had reached the second stage, but there was very perfect recovery, and some good ground, therefore, to hope that it would continue. In the tenth case, the disease had arrived at the third stage; but its extent was more limited than in most cases so far advanced, and the general health had never sunk to a low point. These circumstances, and the perfect restoration of the general health, with almost complete removal of the local signs, lead us to hope that the small cavity, if not already obliterated, might ultimately be completely healed. The fatal result in the eleventh case, where a good recovery of very considerable duration had been made, shows that there is uncertainty as to the result of all those cases where a cavity of any considerable size has once been known to exist, however perfectly the disease may seem to be arrested. The termination in the twelfth would lead to a similar observation; but in this case it is satisfactory to add that, though the original extent of the disease precluded any favorable anticipations, reparation was carried forward to a much greater extent than was expected, so that the disease did not prove fatal in the ordinary way by sinking, but by an accidental inflammatory complication. In the thirteenth and fourteenth cases it was hoped that, as the constitutional powers were good, the alterative influence of a complete change of climate might enable them to maintain the ascendency over the local disease; a result which the good state of the general health in the fifteenth may possibly also effect, though the amount of dulness would give us cause to fear a renewal of the disease. In the sixteenth, there has been such perfect renovation of the general health, and cessation of cough, with return of aptitude for business, that recovery may be regarded as perfect, with every prospect of being permanent. In the seventeenth, restoration has been effected from an almost hopeless condition; but I should fear that with the constitutional tendency to the disease, strongly indicated by external scrofulous disease, as well as advanced internal tubercular affection, there would be a tendency at some future period to a renewal of the disease. The eighteenth case is one where we have a very limited deposit of tubercle of apparently very chronic nature, not in any way affecting the general health; and there is reason to expect that ordinary care and attention on the part of the patient will prevent it affecting the duration of his life. The nineteenth is one of the most interesting and encouraging cases that have come under my observation. It is an example of recovery to a vigorous state of health from the lowest degree of weakness, emaciation, and hectic fever, with severe diarrhœa, which teaches us that we should never abandon any case till remedial means have been fairly tried. It is also a case in which we have evidence of recovery being

effected by absorption of tubercle, shown by gradual diminution of dulness; by cretaceous transformation proved by the expectoration; and by cicatrization, rendered probable by the slow but complete removal of the signs of a cavity. That recovery may be permanent, is rendered highly probable, not only by the great improvement in the local signs, but by the vigorous state of health attained.

"General observation of tubercular disease of the lungs, as well as the results in some of the previous cases, enable me to express with confidence the opinion that perfect recovery in the early stage may not unfrequently be permanent; that it may likewise be so in those advancing into the second stage when the extent of disease is limited; but that in those in the third stage, where one or more cavities exist, perfect recovery is so rare that it can be permanent only in exceptional cases. It is, however, satisfactory to know that though the ultimate result must in these cases be very generally unfavorable, the disease may often be suspended, and a fair amount of health enjoyed by the patient for an indefinite period of years."

ART. 51.—*On the treatment of Phthisis by Chlorate of Potash, with observations on Oxygen and Ozone as therapeutic agents.* By Dr. J. E. FOUNTAIN, of Davenport, Iowa.

(*Amer. Med. Monthly*, Sept., 1860.)

Adopting as his motto a statement of Liebig that "oxygen is the leaden weight, or bent spring, which keeps the clock in motion; the inspirations and expirations being motions of the pendulum which regulate it," Dr. Fountain looks upon the therapeutical indications in tuberculosis and kindred diseases in a simply chemical light, and the treatment is practically reduced to the question, *by what and in what manner* can we best supply to the system the oxygen which is demanded for the proper performance of its functions, and thereby counteract the deleterious influences resulting from the *imperfect aëration of the blood?*

Dr. Fountain details three cases, which, from all rational and physical signs present, must evidently be considered as tubercular, in which the treatment with chlorate of potash was followed by very satisfactory results. We give the last case in full.

CASE.—Mr. H—, æt. 34, placed himself under my care early in November, 1859. He had the appearance to every one of a man sinking under the influence of confirmed phthisis. To this he was predisposed from his father, who died young with this disease; mother still living and well. A gradually increasing cough and failing health had been gaining upon him for the past five years.

Once, during this period, he had improved under the use of cod-liver oil and phosphate of iron. Free and quite profuse hæmorrhage from the lungs once, and slight traces of it a number of times during the past year. When he applied to me he was conscious of losing strength very fast. Marked emaciation, and unhealthy expression of countenance; very frequent cough, but seldom any expectoration; no appetite; respiration hurried and oppressed; pulse seldom below 90; moderate dulness on the right side, over the infra-clavicular region; no râles, but respiratory murmur indistinct and irregular. As he had once been benefited by cod-liver oil and the phosphate of iron, I first

prescribed the same treatment, thinking it might again have a similar effect. This was continued faithfully for about two weeks, without any material benefit, when I directed it to be discontinued, and prescribed the chlorate of potash alone, half an ounce daily, as in the above cases. In less than a week he assured me that he felt a decided benefit from the treatment. The improvement continued steadily from this time, and he completely regained his health and strength in less than three months. *He took half an ounce of the chlorate of potash daily for six weeks*, and two drachms each day for the succeeding four weeks; since which time he has taken it only occasionally, and in smaller quantity. At present time of writing (April, 1860) he is actively engaged in business, in good strength and flesh, having no cough, except a trifle from a recent cold; complexion perfectly healthy, and appetite good. His own feelings and general appearance indicate a perfect restoration of health.

The author remarks that, "though the treatment was purely experimental, it was not empirical; for the chlorate of potass was given on the assumed principle of *conveying oxygen to the blood*, by which a portion of the lungs was expected to be relieved of their task; the vital power of the blood increased, rendered more capable to perform its functions, and by which tubercular deposits might be arrested, and absorption of those already formed promoted." The author deduces the following conclusions from the cases detailed:

1. The chlorate of potash can be given in large doses every day for a long period, without injury.

2. It aids the functions of respiration by supplying the blood with oxygen.

3. It operates as a natural *tonic alterative* and *blood depurant*, by increasing the supply of that element which is the most active agent of nature in the chemical changes which take place in the laboratory of the human system.

The remainder of Dr. Fountain's able and very interesting paper is devoted to a clear and terse criticism of the various views held in regard to the nature of *ozone*. He comes to the conclusion that ozone is oxygen in the *status nascendi*, and hence the efficacy of the chlorate of potash, which, decomposing in the blood, furnishes to the latter a large amount of oxygen in the ozonic state, when the effects are most powerful and energetic.

Art. 52.—*On the diagnosis of Phthisis by the Microscope.* By Dr. Frederick J. Brown, of Rochester.

(*British Med. Journal*, April 21, 1860.)

Dr. Brown adopts to the full the views of Dr. Andrew Clark, and particularly this—that the physician can confidently pronounce upon the existence of phthisis, when he detects the presence of the elastic trabeculæ of the air-vesicles in the sputa. To be able to do this he regards as one of the great discoveries rendered to pathology by the microscope.

ART. 53.—*On the action of Iodide of Iron upon Phthisis.* By Dr. COTTON, Physician to the Hospital for Consumption at Brompton.

(*Medical Times and Gazette*, June 16, 1860.)

Dr. Cotton tests the action of this compound upon twenty-five cases, not selected, but taken just as they arrived at the hospital, those only being excluded which either were at too advanced a stage to admit of any remedial treatment, or which happened to be labouring under some inflammatory or other important complication.

The iodide was administered in the form of the syrupus ferri iodidi mixed with water, in doses of a drachm, twice and sometimes three times a day. It was continued, according to its effects, for various periods; the shortest being one month, and the longest three months.

Of the twenty-five patients, eleven were males and fourteen females; their ages varied from eighteen to forty years. Eight were in the first stage of the disease; three were in the second stage; and fourteen presented positive evidence of pulmonary cavities. In ten cases there was great improvement; in four moderate improvement; and in eleven no improvement.

In analysing these results, it was found that of the ten greatly improved, four were in the first stage of the disease, and six in the third. Of the four moderately improved, one was in the first stage, one in the second, and two in the third. Of the fourteen in whom no improvement was noticeable, three were in the first stage, two in the second, and nine in the third.

Three cases of improvement were very decidedly marked; two of these patients, whose disease was only in the first stage, left the hospital with their pulmonary affection quiescent, and apparently restored to health, calling themselves, indeed, "quite well;" and the other, although more advanced, and in the third stage of phthisis, was marvellously improved, and able to resume his occupation.

In two cases hæmoptysis came on during the administration of the iodide, and in two the iodide was discontinued on account of headache and dyspepsia. The spitting of blood probably was in no way attributable to its use, hæmoptysis having occurred previously in the same patients; but the other symptoms, having ceased or diminished with a change of medicine, might perhaps fairly be referred to its employment. Except in these instances, the iodide of iron appeared to agree very well with the patients, several of whom improved very much in appetite and strength.

Three of the patients in whom there had been no improvement afterwards derived benefit from other medicines.

In eight of the cases cod-liver oil was occasionally taken in combination with the iodide; one half of these were found to belong to the class of improved, the other half to that of not improved.

Of the fourteen improved cases, ten gained in weight, some of them very considerably, three remained *in statu quo*, and one lost two pounds while under treatment. The improvement, however, was not always

in proportion to the increase of weight, some of the patients who had increased the most having improved the least.

It is, perhaps, worth recording that one of the patients took, accidentally, an ounce of the syrup, which would contain thirty-two grains of the iodide of iron. It produced a distressing feeling of weight at the epigastrium, attended with nausea and subsequent purging. For several weeks afterwards there was a loss of appetite, depression of spirits, and a constant feeling of uneasiness in the region of the stomach, all of which, however, gradually passed away, leaving the patient apparently none the worse for the overdose.

After making due allowance for the influence of concomitant circumstances, such as rest, hygiene, and hope, all of which claim a prominent share in the improvement of all hospital patients, we are justified, Dr. Cotton thinks, in arriving at the following conclusions:

1. Syrup of the iodide of iron, in doses of a drachm twice or three times a day, occasionally produces headache with some dyspeptic symptoms; but, for the most part, it is found to agree very well with consumptive patients.

2. Although very far from exhibiting what might be termed a *specific* effect, it nevertheless seems to act very beneficially in a fair number of consumptive cases, especially in those where the disease is only in an early stage.

3. Under its influence the patient's weight is generally increased.

Art. 54.—*On the treatment of Phthisis by Linseed Oil and Whisky.* By Dr. ——

(*Louisville Med. News*, March, 1860; *Amer. Med. Monthly*, June, 1860.)

The following remarks are taken, by the editor of the last-named journal, from an anonymous review in the former journal. The reviewer is supposed to be Dr. J. Lawrence Smith. We copy them because we think the addition of a small quantity of spirit to the oil may be of service in many if not in all cases. At any rate, we have long been in the habit of recommending cod liver oil and rum in equal quantities in cases where the stomach was indisposed to deal with the oil by itself, and, we think, with most satisfactory results. (C. B. R.)

Speaking of the combination of linseed oil and whisky, the writer says:

"In a reasonable experience of five or six years the results are so encouraging that we have no disposition whatever to fall back upon the more offensive and very expensive article which is said to be obtained from the liver of the cod-fish." . . . "In the use of the linseed oil and whisky, we are in the habit of ordering a teaspoonful of each three times a day, and as the stomach becomes accustomed to it, increasing the quantity to a tablespoonful. When they are put in the same bottle and shaken up thoroughly before use, the taste of the oil is in a great measure covered up by the spirit, and is very rarely offensive even to delicate stomachs." . . . "It would be

mere repetition to go over the words, cough, expectoration, hectic, emaciation, night-sweats; but all these things have we seen pass away under the use of the oil and whisky, and a few months have brought up the patient to normal weight, normal appearance, and normal sensation. It is not designed to claim for the linseed oil any medicinal advantages over the cod-liver; but if it is more certainly pure, if it is cheaper, if it is less offensive, and accomplishes what is claimed for the fish oil, it certainly commends itself as a boon to poverty and to sensitive stomachs, and as such we commend it to the profession."

ART. 55.—*On the non-prevalence of Phthisis in the Hebrides, and along the north-west coast of Scotland.* By Mr. JOHN E. MORGAN.

(*Med.-Chir. Review*, Oct., 1860.)

In this essay Mr. Morgan establishes satisfactorily the small amount of mortality arising from phthisis in these districts, and speculates as to the cause of this favoured distinction. The chief cause, according to the author, is the inhalation of the smoke of peat fires; a process for which the aboriginal chimneyless Highland bothie furnishes every facility.

ART. 56.—*Cases of Obstruction of the Veins of the Lower Extremities, causing Œdema of the corresponding Limb, occurring in Phthisical patients.* By Dr. CURSHAM, Physician to the Brompton Hospital for Consumption and Diseases of the Chest.

(*Proceedings of Royal Med. and Chir. Soc.*, June 26, 1860.)

The author relates four cases of the above description, all of which occurred in patients in an advanced stage of phthisis. In three the œdema was confined to one limb, the corresponding veins being found closed with coagula. In one case both limbs were affected, and in this the lower part of the vena cava (as well as both femoral veins) was obstructed. He refers to similar facts published by different authors, and observes that the cases he has recorded correspond closely with those described under the name of phlegmasia dolens. The author, however, is disposed to think they had some other origin than the one to which that disease has been attributed, and states his reasons for considering them as coming under the class of cases in which coagulation in the veins is produced by the presence of pus or some foreign matter in the blood, and that the subsequent inflammation was owing to the stagnation of the vitiated blood in the vessels.

Art. 57.—*On Emphysema of the Lungs.*

By Dr. Waters, Physician to the Northern Hospital, Liverpool.

(*Proceedings of the Royal Med. and Chir. Soc.*, June 26, 1860.)

Although much has been written on the subject of pulmonary emphysema, there are yet many points in connection with it which require investigation. There is, perhaps, no disease the symptoms and physical signs of which are so readily explicable, from a knowledge of the structural changes by which it is accompanied, as this particular affection; and hence an acquaintance with the minute anatomy of the healthy lung tissue becomes of the utmost importance, in order fully to appreciate the morbid changes which take place.

(Here follows, in the paper, a brief description of the arrangement of the "ultimate pulmonary tissue.")

Pulmonary emphysema is of two kinds: 1. *Intertubular emphysema;* 2. *Vesicular emphysema.* The second, or vesicular, is by far the most important, and will be alone considered. It exists in three forms, differing only in the extent to which they involve the lung.

1. *Partial lobular emphysema,* involving a few air-sacs, or, at most, only a single lobulette. This is not often seen as an independent affection; but in lungs which are the seat of the second form, it occasionally exists in small patches along the margins of the lobes. These patches resemble small vesicles, and, when numerous, have somewhat the appearance of a row of beads.

2. *Lobular emphysema.*—This is the form most frequently met with. It involves one or more lobules in different parts of the lung, and is especially found along the margins of the base, the anterior border, and at the apex. It frequently exists in connexion with phthisis, and occasionally with pneumonia. In this form it is easy to trace the divisions of the lung; the boundary walls of the lobules have not usually given way, and generally no interlobular emphysema exists. The air-sacs of the lobule are not necessarily all equally dilated, those at the circumference being most so. The emphysematous lobules may be seen projecting above the level of the lung, and, in some instances, they become developed into "appendages."

3. *Lobar emphysema.*—This form involves the whole of a lobe, or an entire lung, or very frequently both lungs. It constitutes a very formidable affection, and often destroys life at an early period. The lung is much increased in size. The outlines of the lobules frequently cannot be distinctly seen, in consequence of the rupture of their boundary walls and the production of inter-lobular emphysema.

In investigating the morbid anatomy of emphysematous lungs, the same methods of preparation were used by the author as had been previously employed in the examination of the healthy organ, viz., injection, inflation, and desiccation.

With regard to the structural changes which take place in the disease, we recognise, in the early stages, a simple dilatation of the air-sacs, and a diminution in the height of the alveolar partitions. A further dilatation takes place, with more or less complete obliteration of the alveolar septa. This distension produces a divergence of the

elastic fibres of the air-sacs, and is soon followed by a perforation of the walls themselves, so as to give in the advanced stage a perfectly cribriform appearance to the membrane of which the walls are formed. This is followed by rupture of the elastic fibres, a further distension of the air-sacs, with a general breaking down of their walls; so that in the most advanced stages of the disease large cavities are found, traversed in all directions by membraneous sheds or fibrous cords. The inner surface of the emphysematous lung-tissue presents the same microscopic appearances as that of the healthy tissue.

In some lungs in which lobular emphysema existed, the air-sacs were found much distended, but no perforations existed; whilst in others, and especially where the disease was of the lobar kind, extensive perforations were found, with not more, and in some instances less, dilatation than in the former. This would seem to indicate some degeneration of tissue in the one case, which might be absent in the other.

The condition of the blood-vessels explains the anæmic appearance of the emphysematous lung. In the earlier stages, the capillaries of the pulmonary plexus are wider apart than in health, and as the walls of the air-sacs are perforated, and the latter more distended, the capillaries become ruptured and absorbed. The vascularity of the lung in a condition of advanced emphysema is very slight.

The bronchial tubes are usually dilated in old-standing cases of emphysema, their mucous membrane is pale, and there is increased development of the circular muscular fibres.

An important question in connection with emphysema is, whether the disease is preceded by, or attended with, any degeneration of tissue.

With regard to the existence of fatty matter in the emphysematous lung, a considerable number of specimens were examined with great care; and although, in one or two instances, indications of its presence were found, as a rule it was entirely absent. Dr. Jenner has stated that fibrous degeneration frequently exists. A number of specimens were examined, to ascertain whether any alteration of this kind could be observed in the elastic fibres, as compared with those of the healthy lung: the results arrived at on this point were imperfect, and the question is left for future investigation. Some kind of degeneration is believed in many cases to exist.

With reference to the determining cause of pulmonary emphysema, the view that the disease is produced by expiratory efforts appears to the author the most tenable.

Serious objections seem to present themselves to the theory advocated by Dr. Gairdner, that the disease results from increased distension, during inspiration, of one part of the lung, in order to fill the space previously occupied by a collapsed portion.

During inspiration, the chest expands to make room for the dilating lung, air is drawn equally to all parts of the lung, and is not driven by any external force to one part more than to another. It is difficult, therefore, to understand how an excessive quantity of air should find its way to any particular portion. If the chest must reach a certain expansion, it would rather appear that the entire lung would be every-

where slightly dilated, except where collapsed, or else that those parts nearest the collapsed portions would be most distended. Such parts, however, are not the most frequent seats of emphysema. Further, the lungs can undergo very considerable distension without suffering any injury.

Although the lungs undergo equable pressure during ordinary expiration, this by no means proves that such is the case during acts of coughing—in fact, the contrary is true, as has been shown by Dr. Jenner.

The conformation of the walls of the chest, and of the lungs, seems to render it necessary that the latter should undergo unequal compression during violent expiratory efforts with a partially closed glottis, and that air should be driven, first, to those parts of the lungs where the walls are least resisting; and secondly, to those portions which contain the least volume of air. The least resisting part of the thoracic walls is that which covers the apex of the lung; it consists of a membraneous expansion, and plays no active part in the expiratory process. As a fact, we find, in coughing, that the lung bulges into the lower part of the neck. The parts of the lung which contain the least volume of air are the margins. These are out of the direct line of pressure which the lung undergoes in violent expiratory efforts, which are chiefly effected by the abdominal muscles, especially the recti. The contraction of these muscles, forcing upwards the abdominal viscera and the diaphragm, produces the greatest amount of compression at the base of each lung; the air is driven upwards in a strong current, which overcomes the current from the other portions, and these, instead of becoming emptied, remain forcibly distended.

The phenomena witnessed in M. Groux may be adduced in support of the view that, during coughing, the lungs become distended in any part where the walls of the chest offer but little resistance.

Lastly, the cases recorded in a paper written by M. Guillot—in which what he describes as sub-pleural emphysema was found after death preceded by long-continued and violent spasmodic cough—may be cited in favour of the expiratory theory of the production of the disease, a theory which anatomical arrangement and physiological phenomena seem to point to.

ART. 58.—*On Paralysis of the Bronchial Muscles.* By Dr. JAMES F. DUNCAN, Physician to the Adelaide and Simpson's Hospital, &c.

(*Dublin Quarterly Journal of Medical Science*, May, 1860.)

Dr. Duncan thinks that long-continued inflammatory action in the bronchial mucous membrane must impair, or even destroy altogether, the contractility of the muscular fibres which lie in close contact with the under surface of the inflamed membrane; and he relates a case of much interest, which strongly tends to confirm this opinion.

CASE.—Eliza S—, a married woman, æt. 40, the mother of nine children, was admitted into the Adelaide Hospital, December 12th, 1859, labouring under a hard cough, with frothy and scanty expectoration, and suffering from

intense dyspnœa. Her history was this. She was a laundress by occupation; twelve months previous to her admission, when in a state of perspiration, she had gone out of her washing-room into the open air to gather in some clothes, when the weather was very severe and snowing. In this way she got cold, which affected her breathing, and from which she had never recovered; within the last four or five weeks her condition had got very much worse, her sufferings being greatest at night; for several weeks she had been totally unable to lie down.

At the period of her admission she was a picture of suffering; she was worn out from want of rest, looked pale and emaciated; her lips were vivid, and her respiration, though only 18 in a minute, was forcible and laboured. On examining the chest, it was of a rounded form, hyper-resonant on percussion, with a feeling of increased resistance under the pleximeter, and with loud, sonorous, and cooing râles, audible in every direction. There was no lateral or antero-posterior enlargement of the thorax during respiration; it moved, as a whole, as if the ribs and cartilages formed one firmly united and unalterable piece, and the only increase its capacity admitted of was by the elevation of its upper margin, and the depression of the diaphragm.

The manner in which the respiration was carried on sufficiently accounted for the pain and difficulty she felt at night. The involuntary muscles not being able, without assistance, to maintain the necessary expansion of the chest to carry on respiration, each act of respiration was, to some extent at least, an effort of volition; and as the condition of sleep implies the abeyance of sensation, she was obliged to remain awake to keep herself alive. But there was one feature in her dyspnœa which could not fail to strike the most ordinary observer, and which appeared to me to give it a peculiar character, and that was, the great disproportion which existed between the duration of inspiration and that of expiration. In health, so far as I have been able to observe, the act of inspiration is really longer than that of expiration; at all events, I am satisfied that it does exceed in duration the period of time occupied by expiration. But in S—'s case this ratio was reversed, the duration of expiration being fully three times as long as that of inspiration. This could be seen by the eye, as well as felt by the hand, and heard by the stethoscope. I am well aware, that in chronic bronchitis a prolonged expiratory murmur, attended by sonorous and sibilous râles, is one of the commonest and best-known signs of the disease. But even in cases where the stethoscope reveals this sign, it is rare to see the difference manifested in a marked manner to the other senses, as it was in this instance.

How is this prolonged effort of expiration to be accounted for? I believe the usual way of explaining it is, by referring it to the diminished force with which the air is expelled from the lungs, as contrasted with that with which it enters; hence, when any mechanical impediments exist to the free exit of the air, owing to congestion of the mucous membrane, or the existence of the products of inflammation on its surface, it must take a longer time than usual for the accomplishment of the effort. But if this were true, how does it happen that such a phenomenon is never observed in acute bronchitis, where such congestion undoubtedly occurs, as well as in the chronic affection? Rejecting for this reason the explanation just given, I attribute the prolonged expiratory murmur to impaired action of the muscular fibres. So long as they retain their healthy vigour and contractility, weak as they are, they materially assist the act of expiration, by simultaneously diminishing the volume of the lungs; but when their vital power is impaired, by reason of the long-continued irritation to which proximity to an inflamed mucous membrane subjects them, they no longer assist, or assist but very feebly

and imperfectly, the other agents whose office it is to diminish the capacity of the chest.

This, then, is what I would consider as the distinctive sign of paralysis, more or less perfect, of the muscular fibres of the bronchial tubes.

But to return to our case. She was treated on her admission with stimulating expectorants, and turpentine stupes at night, but with very little relief. A variety of expectorants were tried in succession, but without advantage.

On December 24th she was put upon a mixture containing nitric acid, which agreed rather better with her than any she had previously used.

On the 26th the galvanic coil was used, and a current of electricity directed through the chest from the side of the neck to the pit of the stomach. This gave her no annoyance, but was productive of no benefit.

On the 27th the report was: "Looks a little better, but there is no material change; sleeps very little (all her sleep had to be taken in the sitting posture, or sleeping in bed with her head raised up); her breathing is very difficult." On that day she was ordered pills, containing half a grain of extract of nux vomica and one grain of ipecacuanha, one to be taken three times a day, and her nitric-acid mixture to be continued. The effect of this treatment was most surprising, and, I must confess, most unexpected. That night she was able to lie down and sleep all night; her breathing was much easier, and her expectoration free. She looked cheerful, and her appetite, which had been very deficient during the whole period of her illness, was improved. That was the first night, as she stated, that she had been able for seven weeks to lie down and sleep all night. Instead of broken snatches of rest in an uneasy posture, she was able, without inconvenience, to resume the natural incumbent posture, and to enjoy the refreshment that none can appreciate so well as those who have been long deprived of it. This treatment was continued with the happiest effects during the remainder of her stay in the hospital; with the exception that, on the 31st of December, the quantity of the extract of nux vomica was increased from half a grain to a grain for a dose; not because the former quantity had in a measure lost its effect, but under the idea that it might the sooner enable her to return to her employment. The effect of the pills, as she described them herself, was to relieve her breathing, promote expectoration, increase her appetite, and keep her bowels open. I certainly was not prepared to find nux vomica a promoter of sleep, believing, as I do, that it is in many of its properties an antagonist to medicines of the narcotic class. Yet so it was; the poor creature, who before was almost unable to close an eye, began to sleep in the daytime, to her own infinite relief. It is scarcely necessary to say, that I do not regard this result as contradictory in any measure to the physiological properties of nux vomica. It was the consequence, not of its direct, but of its indirect action. It did not narcotize the sensorium, but it stimulated the muscular apparatus of the pulmonary system, and, by so doing, removed a mechanical impediment to the proper performance of the respiratory functions. On applying the stethoscope to the chest, it was found that the bronchitic râles had lost much of their intensity; they were shorter and looser, and the expiratory murmur, as contrasted with the inspiratory, was less prolonged. Corresponding to this change in the phenomena of auscultation, there was a corresponding change perceptible to the eye and hand in the relative duration of inspiration and expiration. The former, having lost somewhat of its voluntary character, was neither so forcible nor so short, whilst the latter, though still preternaturally longer, scarcely exceeded the former in duration. At the period of her discharge from the hospital, January 6th, 1860, the two effects were very nearly equal in length of time.

ART. 59.—*A remarkable case of Pneumothorax and Dissecting Aneurism of the Aorta.* By Dr. RANKING, Physician to the Norwich Hospital.

(*British Med. Jour.*, Aug. 25, 1860.)

The following case is more than usually interesting on two grounds; first, as exhibiting an instance of recovery from idiopathic pneumothorax, and secondly as offering an additional instance of a still more rare disease—dissecting aneurism of the aorta.

CASE.—A young man, of delicate aspect, æt. 19, was, while at church, suddenly seized with acute pain in the left side, accompanied by intense suffocative dyspnœa. He was removed home, and soon placed in bed, when his breathing gradually became more tranquil. I saw him the next day, in the following condition:—He was sitting up in bed, much disliking the confinement, which he chose to think was unnecessary. The breathing was short, but free from pain or anxiety of countenance. From the history of his seizure, contrasted with his comparatively comfortable condition at the moment, I was first at some loss what to expect; but from habit, rather than from any suspicion of serious disease, I examined the chest. In doing so, I was not a little surprised at the physical signs which presented themselves.

On inspection, the whole of the left side was rounded and motionless, with the intercostal spaces obliterated, as in empyema. The percussion note, however, was tympanitic universally, and to the most marked degree; there was also entire absence of natural breath sound; all was silent, with the exception of amphoric blowing under the angle of the scapula and well-defined metallic tinkling. The heart was beating also considerably to the right of the sternum. These physical signs were clearly referable to the presence of air and fluid in the left pleura, generally supposed, in almost all cases, with the exception of those arising from external violence, to depend upon perforation of the lung connected with a tubercular cavity. But nothing in this patient's history betrayed any condition from which this species of perforation could have proceeded. There was no trace of phthisis—no evidence of violent bodily exertion; he was, in fact, sitting quietly in church when the pneumothorax occurred.

Speculation as to the origin of this rare condition was so obviously useless, that our therapeutic efforts were directed alone to the meeting of any urgent symptom which might arise, and which general experience taught us would arise. To our gratification, however, as well as surprise, the patient steadily improved; the lung expanded, and in, I believe, two months he was again engaged in his usual avocations. From this time, until about three months since, which was the date of the next rare episode in the patient's pathological life, I did not hear or see anything of him.

On this latter occasion, I was, in common with several other medical practitioners, summoned hastily, and found the patient dead on my arrival. It seemed, from the history given me in explanation of this sudden event, that on the 12th of May he complained, while at his office, of faintness, with pain in the back. He took some stimulant, and speedily recovered sufficiently to walk home. Next day, he took some domestic remedy, under the impression that he was suffering from dyspepsia; but he did not seek any medical advice. On the next day, he went again to the office, and there again complained of pain in the back and loins. The same evening he was remarkably full of spirits, and sat up late. He went to the office, as usual, next morning, returned

to dinner, and again returned to the office, complaining of some pain in walking. He had not been long in the office, before he uttered a loud cry, and became faint and collapsed; he was laid down, and soon recovered sufficiently to be taken home. On his arrival, he felt so much better as to request to be allowed to walk upstairs. This, however, was not acceded to, and he was carried up; but he undressed himself and got into bed without assistance. A friend sat for some time, but finding him apparently better, he left him, and went downstairs. He had scarcely done so, when he heard a loud shriek, and rushing up, found the patient in the agonies of death.

A *post-mortem* examination was made twenty-four hours after death. The corpse was that of a tall, thin young man. The thorax had been opened before my arrival, and from the right pleura two quarts of fluid blood had being taken. As I was anxious not only to discover the immediate cause of death, but also the condition of the left lung after his poor attack, the thoracic organs were carefully scrutinised. There were no pleural adhesions on either side, nor was there any appearance attributable to the previous attack of pneumothorax. Both lungs, though small from compression, were entirely free from tubercle; there were a few dilated air-cells, especially near the apex of the left lung, where several cells had been ruptured into one. Below the left lung a large fluctuating bag was seen, extending the whole length of the thorax. This proved to be fluid behind the costal pleura, and an incision determined it to be semi-coagulated blood. The heart and lungs were now removed, by dividing the trachea and œsophagus in the neck, and detaching them from above downwards, when the entire track of the aorta through the diaphragm was seen to be infiltrated with clotted blood, particularly in the posterior mediastinum, where it existed in large quantity. The same condition also extended throughout the track of the abdominal aorta, as far as the iliac arteries, the blood had been extravasated extensively between the folds of the mesentery, and into the pelvic cellular tissues. The pericardium was free, and did not contain any fluid. The heart was of medium size, and of healthy consistence. The outer coat of the aorta was marked in front by patches of extravasated blood, of the nature of ecchymosis; but, in its posterior aspect, from its origin, it was surrounded with clotted blood, to such an amount as to make dissection difficult. The heart, when opened, presented perfectly healthy valves; but the ascending aorta, from about a quarter of an inch above the valves, exhibited the appearances known as those of dissecting aneurism. The inner and middle coats were seen to be separated by a layer of coagulated blood, to the extent of half an inch at the base, and throughout the whole track of the vessel, even to its abdominal portion. The lining membrane of the vessel was healthy, with the exception of a few small specks of atheroma; and in one spot, in the upper aspect of the arch, was a small slit, not more than three eighths of an inch long, through which the extravasation appeared to have taken place. The point of exit of the blood into the cellular tissues, in the mediastinum, and into the right pleura, could not be found, as the examination was performed under very unfavorable circumstances. It may be stated that the liver and other abdominal organs were sound.

In reviewing the pathological history of this remarkable case, the first obscure point is the nature of the lesion which gave rise to the pneumothorax. This condition is, as it is well known, an occasional concomitant of phthisis, in which case there is no difficulty in explaining its occurrence, by the perforation of the pleura investing a phthisical cavity; this is, in fact, the mode of its production in the great majority of cases. But, in the present case, there had not been

any antecedent history of tubercle, neither was there any post-mortem evidence of it. Could the air have gained access to the pleural cavity by rupture of the congregated emphysematous air-cells, previously adverted to? I believe this to be a rational explanation, and that its probability is favoured by the comparatively little intensity of the symptoms, and by the absence of any indications of that vascular disturbance which the presence of purulent fluid in the pleural cavity would have produced. In reference to the occurrence of dissecting aneurism of the aorta, this case may be said to be invested with still further interest, from the actual rarity of the accident. At the time I placed one instance on record (in 1847) only twenty-one cases had been published, and since, as far as I am able to ascertain, but six or eight have been met with; so that thirty two or three will be the outside number from which our acquaintance with this peculiar lesion is derived. In the present instance, the moment of the original rupture of the inner coat of the vessel seems to have preceded death by several days, and may clearly be associated with the tearing pain in the back and transient faintness, while successive separations of coats seem to have been marked by the repetition of the attacks of syncope, until at length the giving way of the outer coat of the arteries, and the flood of extravasated blood into the cellular tissue, at once extinguished life.

ART. 60.—*Demonstrations of Diseases in the Chest and their physical diagnosis.* By Dr. HORACE DOBELL.

(8vo, London, Churchill, 1858, pp. 115.)

The plan of these demonstrations had its origin in the difficulties which the author experienced in his own early studies in associating physical signs with the structural changes upon which they depend, and which he overcame by making drawings of the principal diseases, as specimens presented themselves in the dead-house, and by attaching to a set specimen a concise statement of its physical signs. In carrying out this plan, Dr. Dobell gives us ten coloured plates of considerable artistic excellence, exhibiting thirty-five distinct specimens of lung and pleural disease, and facing each plate, so that the eye can at once turn from the one to the other, the concise statement of the physical signs connected with each specimen. What is done is well done. There is every facility for learning the lesson given, and we can readily conceive that there are some students who will derive some considerable assistance from this mode of teaching, particularly if they will read and master the preliminary matter which is supplied upon the subject of physical diagnosis.

ART. 61.—*Contributions to the study of Spirometry.* By Dr. BALFOUR.

(*Proc. of the R. Med. and Chir. Soc.*, June 20, 1860.)

The author's investigations confirm the observations on the vital capacity of the lungs in Mr. Hutchinson's paper read to the Society

in 1846. He gives the results of the measurements, by the spirometer, of the recruits—1126 in number—enlisted into the Grenadier Guards between October, 1848, and March, 1853, with the mortality and invaliding among them from the dates of their enlistment till the end of March, 1854.

After certain corrections pointed out by the author as necessary to render a comparison accurate, the results of the measurements in the Guards are almost identical with those made by Mr. Hutchinson, as will be seen by the following summary, showing the average "vital capacity" of men of different heights.

HEIGHT.	5 ft. 8 in.	5 ft. 9 in.	5 ft. 10 in.	5 ft. 11 in.	6 ft.
Grenadier Guards	231·5	239·8	245·6	251·5	258·9
Hutchinson.....	231·5	240·5	245·5	252·0	258·8

The author observes that the identity of these results is very remarkable, and may fairly be accepted as evidence of their accuracy.

He next examines the question whether a low vital capacity may be taken as an indication, either of a tendency to pulmonary disease or of a feeble constitution rendering the individual liable to a high rate of mortality. To test this, the men have been divided into three classes, according to the extent of their "vital capacity," and the mortality in each class has been traced. The results show a most remarkable coincidence in the mortality of the three classes, the difference amounting only to 0·6 per 1000 in favour of men having a vital capacity above the average. But a different result was obtained in regard to the men discharged as invalids, the number who became non-effective being much greater among those having a vital capacity below the average than in the other two classes.

The author next discusses the value of the spirometer in the selection of recruits, as indicating the men having a tendency to pulmonary disease, and points out the necessity in such an investigation of including the total loss arising from consumption, both by death and invaliding. The tables and calculations submitted show that this loss is much greater among the men having a vital capacity below the average than among those of a capacity equal to or above the average. From the results obtained, the author concludes that a vital capacity below the average may be considered rather as indicating a generally feeble organization, less capable of resisting the deteriorating influences to which a soldier is exposed, than as evidence that a definitive relation exists between the vital capacity and a tendency to pulmonary consumption. Although this conclusion would seem to justify the opinion that the spirometer might be advantageously employed in testing the fitness of recruits, the author points out practical objections to it which appear insurmountable, but he admits that it might be useful as an indication to the inspecting officer of the necessity for

a careful examination by the stethoscope in cases of a very low vital capacity among men coming forward for enlistment. Finally, he concurs in the views expressed by Mr. Hutchinson of the practical value of the spirometer to the medical referees of life assurance societies.

Art. 62.—*On the Laryngoscope.* By Dr. Gibb.

(*Lancet*, Sept. 29, 1860.)

Dr. Gibb's account of what Professor Czermak, lately of Pesth, but now of Prague, did with a laryngoscope on a recent visit to London will, we think, make every medical man desirous of possessing one of these instruments, and of learning its use. We would merely add that M. Czermak does not take to himself the credit of having been the first to invent the laryngoscope, and that he disclaims some of the instruments sold as his. The proper instrument, which may be had at Weiss's, in the Strand (Dr. Gibb proceeds), "consists of a circular mirror, perforated by a round hole in the centre (indeed, like that of the ophthalmoscope, only that its diameter is greater); and a small looking-glass reflector, on a stem and handle for introduction into the pharynx. The light employed may be either that of the sun or of a good moderator lamp in a dark room; the latter is always at command. Clear daylight will answer. With a good light, the whole of the pharynx can be illuminated by the aid of this mirror, when the next step is to introduce the small reflector, previously warmed, into the pharynx, gently pressing it against the anterior part of the velum palati and uvula. This proceeding was carried out by M. Czermak in his own throat; and he regulated his movements by the aid of a second reflector, by means of which he himself saw what was being exhibited to the spectator. On his first introducing the small reflector, he repeated the ejaculations 'Ah, ah!' 'Eh, eh!' continuously, which permitted the epiglottis to be elevated during the expiratory efforts, and a good view of the interior of the glottis, with its vocal cords, to be obtained. The lips of the glottis would occasionally close and expand like a fan, the pivot being situated anteriorly; this to my mind is one of the most remarkable and striking features connected with the larynx in its healthy state. This movement was effected by the utterance of the sounds mentioned, and the rapidity with which it was accomplished was truly interesting and remarkable, and affords an idea of what this part of the vocal apparatus undergoes during speaking and singing. He showed me all the different parts of the larynx in a quiescent and active condition, and concluded this part of his demonstration in closing the glottis, by bringing the lateral surfaces of the cords together, and then gliding the arytenoid cartilages forwards into apposition with the base of the epiglottis. This last feature, as he assured me, was one of considerable difficulty to accomplish, and I could perceive that it cost him an effort to do it. It is represented in fig. 10 of the second plate of his work on the Laryngoscope, published this year in Paris.

"Having rested himself for a few minutes, and partaken of a glass

of sherry—an example which we all followed, as our own throats were shortly to be inspected—he reintroduced the reflector, and altered the position of his neck and throat so as to permit of a view down the larynx. With some little arrangement a good posture was gained for the passage of the light downwards, and I saw clearly the rings of the trachea, and afterwards lower down, the right and left bronchi, with the intermediate septum of a yellowish-white colour, presenting a distinct light object between two apparently circular dark spaces. This is also engraved in his book—fig. 7 of plate 2. I must confess that, familiar as I had been with the idea of the actual passage of a probang so far down by Dr. Horace Green, of New York—a feat which I knew was quite possible in such experienced hands—I little dreamt of the possibility of actually being able to *see* thus far down the larynx. There was no disbelieving the evidence of one's senses, but it was some time before I could certainly realise in my mind the fact of having seen from the mouth the bifurcation of the trachea in a living and healthy person. Whilst observing all these, I was fascinated with the intense interest of this novel subject, and was only afraid that I was taxing the good-nature of the professor.

"He now showed me the posterior nares and Eustachian tubes, and all the parts in connexion with the former. The posterior edge of the septum of the nose stood out quite distinct, and the posterior terminations of the middle and inferior turbinated bones were well seen. The orifices of the Eustachian tubes presented circular concavities with raised margins, and certainly seemed different from what they are generally described. The upper part of the pharynx was shown by simply introducing a reflector looking upwards, at the same time holding the soft palate downwards and forwards.

"These illustrations were confined solely to the examination of healthy parts; but a great field is opened out, with the aid of the laryngoscope, for the examination of various internal and hidden diseases of the larynx, of which we at present have scarcely any conception. The professor told me that with its aid he has been enabled to introduce the solid caustic and touch an ulcer within the larynx. If tracheotomy has been performed for laryngeal disease, a reflector can be introduced into the tracheal opening, and a view of the internal disease will be at once afforded from below upwards. Much as the ophthalmoscope has done for hidden and obscure diseases of the eye, it is probable that even more may be expected from the laryngoscope in many terrible, intractable diseases of the larynx. But it appears to me that it is an instrument that cannot be commonly applied, unless by very delicate and steady hands; and it requires a special experience in its use. My own throat was submitted for examination, and the little reflector was delicately and gently applied by M. Czermak in front of the soft palate; I did not feel the slightest uneasiness, although my faucial mucous membrane is irritably sensitive, and I was able to sustain a good, prolonged examination. The professor declared, however, that I knew how to disport my throat for examination; and he said that he saw the laryngeal structures more distinctly and with greater facility than is his custom. Dr. Thudichum was not so fortunate in applying the reflector to my

throat, for it rather tickled the uvula, and I felt disposed to cough. After a little practice on myself with this instrument, I feel persuaded that I shall be enabled to demonstrate its use pretty satisfactorily to others.

"There are other peculiarities in connexion with laryngoscope besides those I have described. It is not necessary, however, that I should do more on the present occasion than to draw attention to the use of this most valuable auxiliary. No one in any way familiar with the delicate structures of the throat should be without it."

(c) CONCERNING THE CIRCULATORY SYSTEM.

ART. 63.—*On Diseases of the Heart; their pathology, diagnosis, and treatment.* By Dr. MARKHAM, Physician to St. Mary's Hospital, &c.

(2d edition, post 8vo, London, Churchill, pp. 276, 1860.)

In this second edition there are two new chapters, one upon fibrinous clots, the other upon functional disorders of the heart; there are also appendices upon five different subjects—the uses of venesection, fibrous arterial clots, the sounds of the heart, the impulse of the heart, and rupture of this organ. In many other points also we meet with valuable additions. What we notice most, however, is a change which especially meets the wants of a time, when there is so much to read and so little time to read it in, and which might be imitated with advantage by the majority of writers when their works are so fortunate as to pass out of the first edition—a change of omission and condensation. Altogether, indeed, we can unhesitatingly recommend this second edition as a work which represents in a concise and practical form the present state of our knowledge respecting diseases of the heart, and this the more, seeing that Dr. Markham is quite of the opinion, now shared by so many, that the violent remedies applied by our forefathers in the cure of acute diseases are not the remedies which suit human nature as at present constituted.

ART. 64.—*On Congestion of the Heart and its local consequences.* By Dr. JENNER, Physician to the University College Hospital, &c.

(*Proceedings of Royal Med. and Chir. Soc.*, June 26, 1860.)

The objects of this paper, the author states, are to call attention to the occurrence of congestion of the muscular tissue of the heart, to the most common and direct consequences of that congestion, viz., induration and toughening of the walls of the heart, and to the influence which those changes of texture exercise on the development of dilatation of the heart, by rendering permanent every increase in capacity from over-distension which would be temporary in a heart whose walls were normal.

Impediment to the passage of the blood, Dr. Jenner says, through the right side of the heart, whatever its cause, must be attended by over-distension of the veins of the heart; and as very gradually de-

veloped, long-continued, intermitting congestion of any organ, the functions of which are over-actively performed, nothwithstanding its congestion, is followed by induration, toughening, and hypertrophy, so the walls of the heart will, under the conditions specified, become harder, tougher, and thicker than natural. And as these changes in the texture of the walls of any hollow viscus are the conditions which determine the occurrence of *permanent* dilatation of that viscus, when pressure on the inner surface of its walls is sufficient to over-distend them; so, when these changes affect the walls of the heart, and there is great impediment to the escape of blood from its cavities, they lead to its permanent dilatation. After describing the general and microscopical characters of hearts the walls of which are indurated, toughened, and thickened, from long-continued congestion, the author details several cases for the purpose of illustrating the general positions maintained in the paper.

ART. 65.—*Case of Imperforate Arch of the Aorta, in which the root of the Aorta was ruptured.* By Dr. BARKER, Physician to St. Thomas's Hospital.

(*Proceed. of Royal Med. and Chir. Society*, April, 1860.)

CASE.—A man, æt. 24, supposed to be in good health, was suddenly attacked, while lacing his boot, with severe pain in the chest, followed by great dyspnœa. He was supposed to have pericarditis. In about a fortnight he came to the hospital much easier, and was said to be convalescent. There was extended cardiac dulness; no heart sounds; and no impulse, except to the right of the sternum. He died suddenly the next day. The coats of the aorta were not diseased, but it was very greatly dilated from the aortic valves to an inch below the innominata. Just below the ductus arteriosus it was completely closed by congenital malformation. There were two recent lacerations of the aorta close to its origin, and through these blood had become infiltrated into the substance of the heart; this had excited pericarditis, as was shown by a thick layer of shaggy lymph; and death had ultimately been caused by rupture of the visceral pericardium, and the escape of a considerable quantity of blood into its sac. The subclavian and internal mammary arteries were much enlarged.

ART. 66.—*On an unusual cause of death in Thoracic Aneurism.* By Dr. B. G. MACDOWEL, Physician to the Whitworth and Wentworth Hospital, Dublin, &c.

(*Dublin Hospital Gazette*, Aug. 15, 1860.)

There is sufficient evidence in the records of medical science to justify the statement, that in cases of thoracic aneurism death is not the result so frequently, as was at one time supposed, of rupture of the sac.

There are numerous ways, as is well known, by which this dreadful disease terminates life: it may be suddenly, by laryngeal spasm; or with time-prolonged suffering, as the result of direct pressure on the trachea; or it may depend upon gangrene of the lung from obstructed

bronchus; whilst, in some instances, the fatal termination seems to be owing to "*the constitutional irritation*" produced by the gradual encroachments of a large tumour. Instances of all these, and of other and rarer conditions met with in fatal cases of this disease, have been repeatedly published; but it does not appear that any case is recorded in which death was owing to spasm of the bronchial muscular fibres, as is exemplified in the following instance.

CASE.—*Symptoms of Thoracic Aneurism—Supervention of Severe Asthma—Death from Asphyxia—Left recurrent Nerve involved in the Tumour.*

The patient, a robust and healthy-looking man, æt. 40 years, came under my observation in the Whitworth Hospital in the month of December, last year, 1859.

Symptoms on Admission.—The symptoms generally were not such as to lead directly to the suspicion of aneurism. The patient complained chiefly of *dyspnœa*, which usually came on at night only. He complained also of *pain*, which he referred to the middle sternal region, and of *cough*, which, so far from presenting any of the peculiarities of that which usually attends aneurisms in the chest, was of a soft character, and was accompanied by rather copious expectoration.

Physical signs.—Careful examination of the chest gave the following results:—No evidence of disease was afforded by percussion; the stroke sound was everywhere normal. At the junction of the upper and middle thirds of the sternum an *unnatural impulse* was recognisable. This symptom, as I have often verified in other cases, was more easily distinguished when looked for during the act of expiration, and for this reason, that at the time when the parietes of the chest are receding, the stroke of elevation (impulse) given by an aneurismal tumour becomes more evident. No projection of the surface was visible, nor could we ascertain the existence of any dulness on percussion over the region where the eye detected abnormal motion, but over this space a loud *double sound* was ascertained to exist, similar to that yielded by the heart, but superior to it in loudness.

This group of signs plainly denoted the existence of *a second centre of sound and impulse* within the chest, and the unavoidable inference followed that this was due to the presence of an aneurismal tumour. Further evidence of tumour was furnished by the marked feebleness of respiration in the left lung, over parts of which the respiratory murmur was completely extinct. There was no *bruit de soufflet*, nor could any inequality in the pulse of the radial arteries be discovered.

Progress of the Case.—Three or four days after the patient's admission his symptoms underwent a complete change; dyspnœa of the most distressing kind, and unremitting in its violence, set in; the patient could not bear to lie down, and orthopnœa was a necessity both day and night: there was a harassing cough, with much thin frothy expectoration.

None of the symptoms which had denoted aneurism remained, nor could any examination, however careful, at this period have detected any evidences of such. Loud sibilant râles pervaded the whole of the chest; respiration was feebly audible over *both lungs*, and not as before, over the left lung only; the substantial impulse and double sound were no longer distinguishable. In fact, at this time the patient presented all the distressing symptoms of an unusually severe attack of asthma, and had we not instituted a very careful examination of the patient before the supervention of these new symptoms, we would not now have suspected, nor would we have had any reasons for suspecting, the existence of an intra-thoracic aneurism. The evidence, how-

ever, on which that diagnosis had been arrived at was too strong to allow of any doubt, and the subsequent pulmonary distress we regarded therefore as depending in some way on the presence of an aneurism. It is necessary to mention here that there was nothing to indicate that the dyspnœa depended on laryngeal spasm; there was no stridor, and the voice was weak and almost inaudible.

This severe form of asthmatic dyspnœa resisted evrything which was given for its relief; the patient became rapidly enfeebled; cold clammy perspirations occurred frequently; the pulse became feeble, and after four or five days of intense suffering, the patient died absolutely asphyxiated.

Post-mortem examination.—A small aneurism was found which sprung from the posterior wall of the aorta in its second stage, and although scarcely larger than a large walnut, had already encroached on the trachea, and projected slightly into its anterior and left wall. The left pneumogastric nerve was merely in contact with the tumour, whilst its recurrent branch was so intimately united with it, that for two inches the nerve could not be distinguished from the walls of the aneurism, on which apparently it was spread out; where the nerve first came in contact with the tumour, its fibrillæ could be seen widely separated and flattened out, but farther on the nervous structure could not be distinguished.

The left lung was considerably smaller than natural; both lungs were more or less emphysematous, and the bronchial tubes were filled with frothy mucus.

The heart was large and flabby, and tore with so much ease as to render probable the existence of fatty degeneration. The kidneys were certainly affected with stearosis.

The connection of spasm of the larynx with pressure on the recurrent nerve by an aneurismal tumour has been clearly and repeatedly demonstrated; at the same time, cases are not wanting to prove that such a result is not necessarily the result of a tumour involving that nerve. On the other hand, the records of a case recently occurring in the practice of the author, show that laryngeal symptoms of great severity may be induced by the direct pressure of an aneurism on the trachea, the laryngeal nerves not being implicated. In the case now detailed, the symptoms produced by pressure on the left recurrent nerve were very unusual and remarkable; the effects which resulted from the pressure of the tumour being propagated, not upwards to the larynx, but downwards along the branches which the recurrent furnishes to the great pulmonic plexus, and so to the ultimate bronchial fibres.

Adopting this explanation, we can understand the cause of the intense asthmatic complication which supervened, as truly spasmodic in its nature as in ordinary asthma, but differing from true asthma in this essential particular, that its cause was organic and not functional, and hence, also, as that cause was permanent, the bronchial spasm was not influenced by treatment, and its continued severity necessarily produced asphyxia.

ART. 67.—*Cancer of the Heart and right Lung.*

By Dr. FULLER, Physician to St. George's Hospital.

(*Medical Times and Gazette*, June 2, 1860.)

Cancer of the heart is not mentioned by Rokitansky and Hasse, and it may be doubted whether there is any case on record in which cancer would appear to have been deposited in this organ primarily. In the present case it is probable that the bronchial glands furnished the starting point to the growth of the malignant deposit.

CASE.—The patient was a man, æt. 61. He was admitted into St. George's Hospital nearly moribund with dropsy and dyspnœa, amounting almost to orthopnœa. There was expectoration of a bloody-looking mucus, almost like that expectorated in pulmonary apoplexy. The history given was that he had had pains in various parts for three months, but no serious chest symptom until three weeks before his admission. On examination of the chest, the right side was found quite dull from pleuritic effusion. A slight systolic bruit was heard all over the heart, the sounds, however, appearing distant. Under treatment by stimulants and dry cupping to the chest, the patient improved considerably, but he again retrograded and died. At the post-mortem examination, a mass of encephaloid cancer was found around the root of the right lung, implicating also the muscular tissue of the heart, the walls of the ventricles being completely infiltrated with it. The right lung was dragged down by the disease embracing its root, but was only just dipped into by it. The pleura on this side was full of fluid. The right pulmonary veins were obliterated, but the artery was still pervious. The disease extended to [as far as] the inferior cava and the œsophagus, but did not press on them. The other organs of the body were free from disease.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 68.—*Tabular statement of seventy-two cases of Hæmatemesis, with remarks.* By Dr. C. HANDFIELD JONES.

(*Proceedings of the Royal Med. and Chir. Society*, June 26, 1860.)

The author states that the 72 cases, of which the particulars accompany the paper, are all that have been met with among 2,500 selected cases of all kinds, and about 10,000, speaking roughly, of all cases occurring in ordinary medical practice. This would give a proportion of ·72 per cent.

The chief practical points which a perusal of these cases suggests are, (1,) The number of cases met with in which the existence of gastric ulceration is a matter of great uncertainty; in which one cannot avoid asking oneself, whether the hæmorrhage may not be simply analogous to common epistaxis. That this is possible, even when the hæmorrhage is copious, is shown by the record of a case given by Dr. Brittan. (2.) The number of cases in which all complaint of dyspepsia was either absent, or so slight that it would have been impossible to distinguish it from that attendant on gastric catarrh or gastralgia, or gastric debility. (3.) The great benefit of a tonic plan of treatment steadily carried out.

The paper was accompanied by a table, in which are recorded, for each of the 72 cases, the age and sex of the individual, the period at which hæmatemesis occurred, any important events prior to the attack, the symptoms observed at the time, and the treatment of the case, with its results.

ART. 69.—*On some chemical questions in connexion with Diseases of the Liver, and their treatment.* By Dr. THUDICHUM.

(*British Med. Journ.*, Oct. 13, 1860.)

Dr. Thudichum commences by referring to a previous paper, in which he states that he has observed in the centre of some biliary calculi certain peculiar pathological formations which he interpreted as casts of the biliary ducts; and that this interpretation has been confirmed by many others to whom he has shown the specimens.

The casts of the biliary ducts, thus described, are found by Dr. Thudichum to contain a large quantity of cholochrome (colouring matter of bile) precipitated in a granular form. The presence of this substance is evidently not due to mere imbibition, but denotes the breaking up of the process by which it has been held in solution in the healthy bile. This has led Dr. Thudichum to investigate the properties of cholochrome; and he has arrived at certain results in regard to it, part of which he has communicated to the physiological section of the British Association at Oxford and to the British Medical Association at Torquay. He now proceeds to recapitulate these results, with additions; to construct a doctrine of the formation of gall-stones; to describe some original investigations on the parenchyma of the liver in health and in disease; and to give some hints as to the treatment of liver-diseases.

After giving an account of the experiments he had made with the view of determining the composition of cholochrome, he then goes on to describe some experiments which he made on the changes undergone by bile during putrefaction. Some large bottles, full of bile, had been allowed to stand for two years and one year respectively. The bile had assumed a feebly acid reaction, a bright port wine colour, and had deposited a copious flaky green and brown deposit, mixed with white chalk-like particles and greenish crystals. This deposit, on analysis, was found to consist of cholochrome, cholic acid, phosphates of lime and magnesia in dichroic crystals, and mucus. The fluid part of the bile was found to contain cholate of soda, taurine, and acetate of soda, phosphate of soda, and some valerianate of ammonia; but no glycocoll, nor any tauro- or glycocholic acid. It was quite clear that the bile had spontaneously undergone that decomposition which is effected by boiling with acids or alkalies, a decomposition which, in its main features, has already been described by Gorup-Besanez. Glycocholic and taurocholic acids had split respectively into glycocoll, taurine, and cholic acid. Some valerianic acid had been formed from some decomposing substance or other, which had combined with ammonia, probably arising from the decomposition of glycocoll. Glycocoll, being the amido-acid of acetic acid, no doubt in this pro-

cess, as in the putrefaction of urine, yielded the acetic acid, which combined with the necessary amount of soda, and precipitated a portion of the cholic acid; while the greater portion of this acid remained in solution, combined with soda. The cholochrome had no doubt been precipitated by the new acid before cholic acid, as its acid properties are much less pronounced.

In examining human gall-stones, Dr. Thudichum has found a resinous matter; of which, however, he had been prevented by the small quantity and other difficulties from determining the composition. In ox-gall stones, however, he had succeeded in finding cholic acid, in such quantity that there could be no doubt of its having been deposited with the cholochrome during the formation of the concretions in the living animal. The presence in almost all biliary concretions of earthy and alkaline salts pointed in the same direction. These were either present in the form of phosphates and carbonates of lime and magnesia, or were combined with the colouring matter of the bile. In gall-stones from man, the colouring matter was accompanied by a larger proportion of inorganic salts; but in gall-stones from the ox, the quantity of cholochrome preponderated to so extraordinary a degree over the earthy matter, that it must be assumed to be present in the free state, and not as some have supposed it to be always, namely, combined with lime.

As matters now stand, the essential constituents of gall-stones seem to be cholochrome, cholic acid, and earthy salts. In man, gall-stones contain a large amount of cholesterine in most cases; but that is a secondary and accidental ingredient, and is mostly crystallised around the other matters forming the nucleus. There are human gall-stones which, like those from the ox, contain no cholesterine. Others are said to consist entirely of cholesterine—a statement which has to be verified by fresh analyses, which must prove the absence of cholic acid. Stearate and palmitate of lime are usually present in human gall-stones. The idea of an inspissation of mucus in the formation of gall-stones is shown by the author to be untenable; the binding material of the concretions is cholic acid.

The process of the formation of gall-stones is explained by Dr. Thudichum as perfectly analogous to that which produces phosphatic calculi in the urinary bladder. The compound amido-acids (taurocholic and glycocholic) split up under the influence of a cause of which the nature remains to be ascertained—probably a ferment from the intestinal canal. They deposit cholochrome and a portion of cholic acid, some salts, and a little fat, under the influence of acetic acid derived from glycocoll. In man, gall-stones contain cholesterine; this has, in the healthy bile, been held in solution in taurocholate of soda; but when the taurocholic acid is decomposed, the cholesterine is set free, and is deposited on any particles which may be at hand. In other words, the process of formation of gall-stones is the following.

Healthy bile contains taurocholic and glycocholic acids, in combination probably with soda. Under the putrefactive change, these two acids split up; the taurocholic acid yielding taurine; and the glycocholic acid, glycocoll. Cholate of soda is left; the glycocoll is destroyed, being transformed into acetate of ammonia.

Valerianic acid is also formed, and combines with the ammonia from the glycocoll. Some free acetic acid then sets free the cholic acid from the cholate of soda, and the cholic acid is precipitated in combination with cholochrome, so as to form casts of the tubes. This takes place in the ox; in man, cholesterine is also deposited in consequence of the breaking up of the taurocholate of soda, which has held it in solution.

Within the last few weeks, Dr. Thudichum has examined the products of decomposition of fibrine, and has found among them cholesterine; which, with a gritty matter and an oil-like body, are left when all the matters soluble in water are removed. The presence of cholesterine and gritty matter in atheroma leads to the question whether this condition is not a simple result of the decomposition of fibrine or of albuminous matter, from which the soluble particles had been washed out. It is further a question whether the cholesterine in gall-stones might not in part arise from the decomposition of cholic acid.

Dr. Thudichum then notices that the healthy action of the liver-cells consists in the absorption of certain albuminous, fatty, starchy, and saccharine matters, and their transformation into the ingredients of bile. When this becomes impaired, the cells assume a fermentative tendency, leading to the same description of decay in the albuminous matter as that which is induced by putrefaction or by treatment with acids or alkalies. He then proceeds to point out that the general principles elucidated in his paper could be applied in the treatment of all liver diseases. In jaundice with obstruction of the biliary ducts, we should make early use of nitric acid or nitro-hydrochloric acid. He had with great benefit given a watery solution of nitrous acid. It is easily made, and may be drank as a pleasant lemonade. It is less apt to produce griping, which, during courses of nitric acid and aqua regia, is not rarely complained of. This acid not only destroys and lixiviates the deposits of cholochrome and other amido acids, but it also tones the digestive organs, and acts antiseptically. Nevertheless, we are yet in want of a remedy to stay the abnormal action of the liver-cells. Creasote is beneficial. In all cases where the disorder of the liver proceeds from the intestinal canal particularly, creasote, charcoal, astringents like gallic acid, and preparations of iron, particularly the tincture of the sesquichloride given together with some nitric acid, are highly beneficial. In a case of desquamation of the epithelium of the kidneys consequent upon chronic jaundice, he had exhibited this latter mixture with the most decided benefit.

Nitric acid was introduced into the treatment of these diseases by Annesley. Many have used it since, with variable success. Dr. Thudichum believes that it is frequently not borne because it is not sufficiently diluted. The more it is diluted, the quicker it is assimilated, and the more certain are its effects.

It might appear paradoxical that a free acid should travel through the blood, and act upon certain parts through tissues. We are, nevertheless, obliged to admit the possibility of that occurrence. Thus oxalic acid and many other acids have been proved to have passed through the blood uncombined, and have been found in the urine in a

free state. Even allowing that blood so mixed with niric acid might show a precipitate, there is no reason why a molecular precipitate in the blood, which is full of molecules of its own, should not again dissolve.

All liver-diseases require the greatest attention to the intestinal canal. Mild purgatives of salts, or fruit, Pullna water, Seidlitz powders, water containing one per cent. of ordinary chloride of sodium and little sulphate, are the best remedies. If stronger purgatives are required, the vegetable ones deserve preference. The fatal error of treating with mercurials the various disorders of the liver, we cannot sufficiently deprecate.

The diet should be juicy, include fruit and vegetables, and eggs and meat. Starch and fat are always badly digested.

The skin must be well attended to. Baths, with some aqua regia, stimulate the skin and open the epidermis.

In true bilious attacks, with indigestion, a furred, sometimes yellow tongue, constipation, sickness and vomiting, headache, yellow appearance of face, and albuginea, he has found the use of blue pill mostly hurtful. Whenever he has been called upon to treat such an attack, his treatment had to deal with the effects of the biliosity and blue pill combined. In cases where such attacks, without previous excesses, become habitual, gall-stones are not rarely developed. He has known two cases to end in phthisis. One, that of a gentleman, married, about forty years of age, is yet under observation. In many cases of phthisis, in which gall-stones are found after death, this habitual biliosity did not rarely precede the disease of the lungs. But phthisis may also produce gall-stone disease.

Lastly, he adverts to the use of soluble phosphates. He has made the observation that bile contains no small amount of phosphate of soda. Without this salt, the assimilation of the fats must be imperfect. Considering, therefore, that the absence of the phosphate may be hurtful, and that its presence never has been found to be so, he is inclined to give it a further trial. It should be given in the food, together with chloride of sodium, or in a dilute solution in water. Considering the action of phosphates upon fatty acids, with which they produce an emulsion ready for transition into the blood, he has thought of combining the acids of cod-oil with phosphates, in order to make this substance more generally digestible.

Liebig has long since shown that the most pleasant manner of giving soluble phosphates consists in the administration of beef-tea; but where this extract cannot be had in a quite reliable form, a weighed quantity of the ordinary phosphate of soda, say to the amount of half a drachm or a drachm per day, or more where it is liked and well borne, is preferable.

In bile, soda preponderates over potassa. In the substance of the liver, the proportions are reversed. The relations of these two bases require further study. It is not probable that the one may substitute the other, and *vice versâ;* and hence the want of potassa may become a source of disease. It is known that this base prevails in the muscles, soda in the blood.

By thus attacking the liver from all sides, we shall soon succeed in

obtaining a surrender of its secrets. This organ can in this way only be stimulated, while it is out of the reach of so-called medicinal stimulants. Torpid liver, sluggish liver, and the like, may be useful practical denominations; but they are not based upon any positive evidence. We much less want cholagogues than we require remedies to appease, subdue, and change the activity of the liver. The organ is accused of much of which it is not guilty. It is by the mouth that most diseases enter; and it is from the insults received from the direction of the intestinal cavity, that this patient and enduring organ—the liver—mostly derives its detriment.

ART. 70.—*Case of Ascites cured* (?) *by means of a spontaneous rupture of the Abdominal Parietes.* By Mr. CROSKERY, late Assistant-Surgeon in the Royal Navy.

(*Dublin Quarterly Journal of Medicine*, May, 1860.)

In Jamaica, Mr. Croskery tells us, the black and coloured people of the poorer classes are particularly subject to ascites. He tells us, also, that this affection is seldom complicated with serious organic changes, and that cure is often and easily brought about by proper treatment. The case in question is as follows:

CASE.—I was summoned, a short time ago, to see a middle-aged negro, living on the summit of a hill in the heart of the mountains of Jamaica, in whose person nature was said to have effected, and skilfully too, an operation which the annals of medicine tell us she very rarely undertakes, and which it is now my good fortune, as well as my duty, to bring to the notice of the profession.

A case somewhat similar has been described by M. Delmas, in which nature had effected a cure by spontaneous rupture of a pouch which had presented itself at the umbilicus.

William Jamison, æt. 50, had been suffering from ascites for some weeks. His abdomen had acquired a considerable size; the respiration was laboured and difficult; the feet, legs, thighs, and scrotum were almost bursting with œdema; he was restless, wakeful and debilitated, and for the last few days a painful tumour, over the centre of the hypogastrium, added to his sufferings. On the centre of this hard and painful spot, a small slough appeared—the poor fellow lay awake nursing his tender burden—when, suddenly, he felt something give way, his bed was saturated—he was being tapped by nature! The slough had been dislodged, and the fluid was spinning from a small aperture, which now occupied its place! In less than an hour the poor man was completely relieved, and the fluid evacuated. Strange to say, nature had selected the very spot where the operation is performed by art! I saw this man a fortnight after the occurrence, and he told me that the fluid had continued to trickle from the wound for about twelve days, and that, by making pressure with his hands above and below the aperture, he had been able, at any time, to empty out the contents of the peritoneal cavity, without causing himself the slightest pain.

On the day of my visit, the aperture had closed, and there was considerable induration of the abdominal wall in its immediate neighbourhood. Some of the contents of the abdomen appeared also to have become agglutinated to its edges. The man's general health was improved, the œdema in

his lower extremities had subsided, and there was no appearance of any re-accumulation of fluid in his abdomen. In short, the man was cured of his disease, and, from all that I can learn, continues so up to this day.

(E.) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 71.—*On the natural constituents of the Healthy Urine in man.* By the Rev. SAMUEL HOUGHTON.

(*Dublin Quarterly Journal of Med. Science*, Aug., 1860.)

Professor Houghton dissents from the view of Barral and others, that the nitrogen excreted from the body is discharged in two nearly equal parts, one *per vesicum et anum*, the other *per cutem et halitum*; and is of opinion that under ordinary circumstances this element passes off, with the exception of a small quantity in the fæces, entirely in the urine. The prime object of the writer is to estimate the quantity of urea excreted under the varying conditions of physical and mental labour; the amount of urea being regarded as a measure of the waste of tissues involved in each species of work. In order to do this, observations were made on various persons, some chiefly engaged in mental, some in bodily labour. The conclusions (it is impossible in our space to give the complicated materials and means by which the author arrives at them) are these:

"1. The quantity of urea passed per day by men in health varies with their food and occupation, the latter being the principal cause, and regulating the other.

"2. Men employed only in manual or routine bodily labour are sufficiently well fed on vegetable diet, and discharge on an average 400 grs. of urea per day, of which 300 grs. are spent in vital, and 100 grs. in mechanical work. This conclusion is in conformity with the experience of the mass of mankind employed in manual labour in all ages and countries.

"3. When the work is of a higher order, a better quality of food must be supplied, sufficient to allow of a discharge of 533 grs. per day of urea, of which 300 grs. are spent, as before, in vital work, and 233 grs. in mental work and the mechanical work necessary to keep the body in health.

"4. The quantity of urea discharged per day varies also with the weight of the individual, which influences the vital and mental work.

"5. The habits, weight, and occupation of the individual, enable us to account for a range of the diurnal quantity of urea, varying from 300 to 630 grs. per day; and this discharge may be confidently predicted, when the habits and weight are known.

"When, in any case, the discharge of urea exceeds that calculable by the preceding data, it must be attributed to ill health, and most generally to that most fatal of all diseases to which man is liable—anxiety of mind—a vague and unscientific expression, which, however, denotes a most real disease.

"This fact alone would render the preceding investigation of importance to the physician, as it enables him, in a given case, to

pronounce whether there is an excess of urea or not, and a consequent waste of the system. I have shown that the mere quantity will not decide this question, as from 300 to 630 grs. may be discharged by persons in perfect health, according to their peculiar work and physical conditions."

ART. 72.—*On diseases of the Kidney, accompanied by Albuminuria.* By Dr. DICKINSON, Demonstrator of Morbid Anatomy in St. George's Hospital.

(*Proceed. of Royal Med. and Chir. Society*, June 26, 1860.)

Dr. Dickinson's object is to show that all the forms of diseased kidney, large and small, rough and smooth, were capable of arrangement into two great classes. That in one there was disease proper to the secreting surface of the tubes, while in the other there was disease essentially of the structures between them; and that the great characteristic difference between these two conditions was the presence or absence of superficial granulation.

The author first sketches the pathology of *tubular disease*, which gave rise to the large, smooth kidney, regarding as unimportant those distinctions which depended on the nature of the material which filled the tubes. He commences by explaining the method made use of in the investigation. Portions of the gland were boiled in water slightly acidulated with acetic acid, and then dried until hard enough to allow sections to be cut from them. These moistened with water, and magnified 80 or 100 diameters, showed the structure of the kidney in a very beautiful manner, and had the advantage of exhibiting the various elements of the gland in their natural relation to each other, which cannot be satisfactorily attained by any other method.

The various successive changes which produced the large smooth kidney are adverted to—the increase of size, the anæmia, more in appearance than reality, the smooth surface, and loose capsule. It is then maintained that the essence of the disease was merely excessive secretion, as the only portions of the gland affected were the tubes. A drawing is given showing that the gland was perfect in all its parts, and the tubes in contact with each other. The accumulation, within the ducts, of their own secretion is shown to be the sole cause of the enlargement of the organ, and the microscopic characters of this epithelial product are examined at some length. The frequent development of oil in the cells is regarded as the consequence of the disease, not as the cause; and the occasional secretion of pus, in the later stages, is looked upon as another indication of the inflammatory origin of the complaint.

The author then shows that there is reason to think that the degree to which the epithelium had become disintegrated might be taken as the measure of the chronic nature of the disorder. The longer the disease had lasted, the more the cells become broken down.

The condition of the straight tubes is then adverted to, the ready escape of their contents tending to produce a different state of things

from that observed in the cortex. They seldom became totally obstructed, but their walls often became bare of epithelium. From the fact that in cases where the tubes in the cortex and in the cones were found after death in a different state, the casts shed during life had always resembled the contents of the straight tubes, it was inferred that these bodies were there produced.

The *renal catarrh* having thus been traced from its commencement, in excess of epithelial growth, to its climax, in total obstruction of the tubes, the next stage is discussed. The overstretched tubes are described as bursting, one by one, and their contents, no longer secluded by a surrounding membrane, thus brought within reach of the absorbents. Examining in section a number of enlarged smooth kidneys, it is found that about half of them had thus commenced to pass from the stage of enlargement to that of decrease. A drawing of such a section is given. Although in these organs the bulk is still excessive, yet the indications of shrinking are clear enough. Places are found, especially near the surface, where the Malpighian bodies are huddled close together, sometimes almost touching each other. Their intervals are occupied by the *débris* of collapsed and ruined structure. Shrivelled remnants of tube-membrane are generally clearly seen. But, as yet, this condition is only partial; tubes still distended are often seen winding among the wasted remains of their companions. Thus the tubes, one after another, collapse until a great portion of the gland is reduced to little more than the bulk of its Malpighian bodies. A corresponding change, of course, takes place in the appearance of the gland. It has shrunk even below the natural size. The surface remains pale, grayish, and mottled, and is still smooth. On section, the cortical material is found to have almost disappeared. A drawing is given representing a section of a kidney in this rare condition.

Examination with high powers and the fresh organ corroborate the conclusions above stated.

The author now passes to the consideration of the intertubular disease, that producing the granular kidney; describing first the chronic and then the more acute forms of the disorder.

In the earliest period at which the disease could be recognised, the capsule is described as being somewhat thickened and adherent, and manifesting a tendency to split into two layers; the tendency to granulation being indicated by a little general roughness, or by a few curved depressions. On section, all the central parts would be found healthy, save that, closely attached to the inner capsular fibre, certain narrow projections could be seen insinuating themselves between the tubes. These processes of fibrous-looking material, each started at the surface from a superficial depression or cicatrix, and passing inwards involved in their interior the contracted remains of the tubes they imbedded in their passage. It appears as if an effusion, small in amount, commenced at the surface and worked its way inwards among the ducts, numbers of them thus becoming completely surrounded. After a time, contraction followed in the wake of the exudation, and the tubes imbedded were reduced to mere microscopic threads. At the same time appeared another result of the contractile

tendency. The points at which the processes originated became depressed; and when these were numerous and tolerably regularly distributed, the result was superficial granulation.

It is maintained that no amount of mere distension of the tubes could suffice to produce a granular surface; that before this could result, the surface must be tied down at numerous points, between which only is expansion possible.

The changes, as discerned by the naked eye and by the microscope, in the fully developed chronic granular kidney are then detailed, and a representation of one in section exhibited. Narrow pointed processes, of a fibrous aspect, are described as passing a little way into the kidney from the intergranular depressions, and in a corresponding position the contracted remains of tubes; these shrivelled tubes being all that in some cases indicated the path of the exudation. It is inferred that this destruction of tubes is not owing to any disease within themselves, because it extended quite independently of their direction, following a straight course inwards, irrespective of the bends and tortuosities of the ducts. If the section happened to come across a vessel, it is seen to be surrounded by an increased quantity of fibrous tissue; as this contracted, the capillaries became obstructed, and the transmitting power of the gland proportionally reduced. The condition of the tubes in this form of disease is contrasted with what is observed in the smooth kidney. In the latter there was an excessive secretion of epithelium, which was universal, affecting alike all the secreting structure. With the granular kidney there was observed an irregular shedding of the epithelium, which was only partial, some of the ducts being affected while their neighbours escaped, in consequence, probably, of an intertubular effusion taking place at intervals through the organ, causing, where it occurred, premature displacement of the epithelial cells.

Cysts are spoken of as occurring in both varieties of disease, but from different causes; in the smooth kidney, from the development of the epithelial germs after the rupture of the tubes; in the granular, from the transformation of the tubes, owing to the contractile tendency outside them.

The author then describes a kidney affected with a more acute and disturbing form of the disease, alluding to the paler tint of the surface, contrasted with the dirty red of the chronic form, and to the larger size of the granulations. A drawing is given showing a section of a kidney in such a condition. The minute morbid anatomy of the organ is detailed; and the tendency of the convoluted tubes to become filled with glassy fibrinous matter, instead of, as in the smooth kidney, their own secretion, particularly dwelt upon. This is attributed to an effusion arising from the capillaries, or other structures between the tubes, soaking through the tube walls and removing the epithelium, until at last it ceased to be reproduced.

The condition of the epithelium is discussed, and the occasional presence of oil in the cells spoken of as the only morbid change to which they were liable—the disintegration they underwent being an alteration subsequent to their detachment. Carefully comparing the epithelium found in the tubes of granular kidneys with that from the

same position in healthy glands, the author professes himself unable to detect any difference.

The results of some experiments are then detailed, the object of which is to determine how far the permeability of blood-vessels of the organ is modified in its various conditions of health and disease. Several kidneys are taken of each kind, and water, at a certain temperature and with fixed pressure, allowed to enter the artery and escape by the vein, and the quantity thus passing in a given time is measured. From these observations, it appears that the large, smooth, mottled kidney allowed the normal amount of blood to pass through it; while through the granular kidney less than one quarter of the proper quantity is transmitted. It is further shown that the obstruction was due to some change in the small vessels of the organ; for careful measurements of the main trunks shows only a slight amount of narrowing, quite insufficient to account for the results. In conclusion, the following chain of evidence, in favour of the intertubular origin of the disease producing the granular kidney, is recapitulated.

1. Near the surface an effusion is often seen obviously between the tubes. This accounts for the superficial granulation, and bears out the analogy between granular degeneration of the kidney and cirrhosis of the liver.

2. Tubes are caused to shrivel by some influence which travels independently of their direction.

3. Tubes are sometimes *divided* into cysts. This can only be accomplished by a contractile force external to themselves. In the smooth kidney this never occurs.

4. It usually happens that some of the secreting tubes remain natural, as if they had been out of the way of the effusion; while in the smooth kidney all are commonly involved.

5. A decided difference exists, in well-marked cases of each sort, in the contents of the tubes. In one they are filled by their own morbid secretion; in the other they are occupied by a material foreign to it, and probably derived from without.

6. In the granular kidney, as in the cirrhosed liver, some alteration takes place in the minute anatomy of the organ, which impedes the passage of blood through it. This does not take place in the smooth kidney.

ART. 73.—*On the relative amount of Sugar and Urea in the Urine in Saccharine Diabetes.* By Mr. SYDNEY RINGER.

(*Proceed. of the Royal Med. and Chir. Society*, June 26, 1860.)

Two cases, patients in University College, under the care of Dr. Parkes, are given, in which the observations were made hourly over a considerable period, thus enabling the sugar and urea to be compared, under various circumstances, with greater accuracy. The following are the conclusions at which the author has arrived: 1st. That after the influence of food on the urine has entirely disappeared, a constant ratio is maintained between the sugar and urea. 2d. That after

a purely non-amylaceous and non-saccharine meal both the sugar and the urea are increased, but that during this increase the same ratio between them is observed. This ratio is 1 of urea to 2·2 of sugar. 3d. That under both these circumstances the sugar could only be derived from the nitrogenous elements of the body, and therefore that some such a ratio might, on *à priori* grounds, have been expected.

The author next shows that, after saccharine food has been taken, the sugar in the urine, as is well known, is increased, but that this increase of the sugar is accompanied by a decided increase in the amount of urea; thus the sugar must cause a consumption of nitrogenous matter, probably resolving it into sugar and urea.

Various kinds of sugars were given, each of which caused an increase in the amount of urea, though whether one kind more so than another is not shown. These facts are sufficient to explain the cause of the loss of flesh in diabetic patients.

He next shows that the amount of urea excreted, in proportion to the amount of sugar taken in as food, varies in different patients, and in the same patients at different times. And that the severity of the symptoms is in proportion to the amount of urea eliminated, through the influence of the sugar, whilst no relation necessarily exists between the amount of sugar excreted and the severity of the symptoms; indeed, as is well known, the quantity of sugar in the urine may greatly rise in amount with the improvement of the patient. The method of arriving at the influence of an ordinary mixed diet is to ascertain the ratio between the urinary sugar and the urea. At least, this method is sufficient in comparing various days together, provided the diet on these days be tolerably similar; for, he states, it is possible to conceive that, though the amount of amylaceous matter may cause a much smaller quantity of urea to be eliminated, yet by increasing the former in the meal the latter may be maintained at the same amount, or even increased; but as more nitrogenous matter would have been taken in with the amylaceous, the proportion of the former consumed would be much less, and consequently there would be more left to nourish the tissues. From this, he thinks, it is evident that the ratio must be obtained, for as most, if not all, the sugar generally passes off, it can be taken as a fair guide to the extent of the meal. This will explain those cases in which the improvement of the patient is accompanied with a decided increase in the amount of urinary sugar. The author shows, from the above cases, coupled with two others Dr. Garrod allowed him to take, that a ratio of 1 to 4 of urea to sugar is rapidly fatal, that life can be prolonged with a ratio of 1 to 8, whilst a somewhat rapid improvement is compatible with a ratio of 1 to 15.

He next states, that as the increase of the urea after a meal in health is probably due to the same cause as the increase under the same circumstances in diabetic patients, and as the sugar rises with it, maintaining the usual ratio (after a non-amylaceous meal), showing that they both come from the same source, if it can be pointed out to what this increase in the sugar is due, it will explain the rise in the urea in health. After stating that it is possible that it may come from two sources—that it may be either due to some organ endowed with this function, which in diabetes is altered, or be the product of the re-

trograde metamorphosis of the tissues—he advances arguments to show that, in these cases, the sugar is due to the former, probably the liver. He hence concludes that the ordinary rise in the urea in health, after a meal, is due to that organ, which in diabetes produces a less highly elaborated sugar, the urea passing off unconsumed with the sugar.

He concludes his paper with a few facts of lesser importance, showing that the sugar after a mixed diet reaches its maximum in the early stage of the disease, during the third or fourth hour, whilst later the maximum is not arrived at till the sixth hour.

That after taking sugar in solution, the maximum is reached during the second hour.

That the duration of the influence is longer later in the disease than at an earlier period; thus, at the commencement of the disease the influence was lost in nine hours, whilst later in the disease it still continued after fifteen hours had elapsed. He also shows that the urea has a tendency to pass off earlier than the sugar, probably because it is more pernicious.

Lastly, charts are given, showing the elevation of the temperatare on several occasions after meals.

ART. 74.—*On the frequent occurrence of Phosphate of Lime in the crystalline form in Human Urine, and on its pathological importance.* By Dr. HASSALL, Physician to the Royal Free Hospital.

(*Proceedings of the Royal Society*, June 4, 1860.)

When the earthy phosphates are treated of by writers, in connexion with the urine, they are usually described collectively, and it is seldom that each kind of phosphate is particularized, and yet there are several which may occur either separately or together. The phosphate of ammonia and magnesia, or triple phosphate, is often specified, but rarely is phosphate of lime separately mentioned, and phosphate of magnesia scarcely ever; and yet phosphate of lime is very frequently present as a deposit in urine, much more so, indeed, according to my experience, than the triple phosphate, excluding those cases of the occurrence of that ammoniacal phosphate, arising from the decomposition of the urea of the urine subsequent to its escape from the kidneys. Even in those few cases in which phosphate of lime is specially mentioned, it is described *usually* as mixed up with the other phosphates, and *always* as occurring in the *amorphous* or *granular*, and never in the crystalline state; further, no peculiar importance is attached to it, as contrasted with the magnesian phosphate.

Even one of the most recent writers on the urine gives the following description of the physical characters of deposits of phosphate of lime in urine: "Deposits of phosphate of lime," he states, "as usually occurring in the urine, and mixed with magnesia, are always white and amorphous, under the microscope appearing in granules, sometimes of a greenish tinge, which exert a refracting action upon light. *Crystallized deposits of this substance have not been observed.*"

Dr. Hassall proposes to show, first, that there is a crystalline deposit,

the crystals composing which will be described hereafter, which does really consist of phosphate of lime; second, that it is of frequent occurrence in human urine; and third, that it is of greater pathological importance than the deposits of triple phosphate.

He now furnishes the results of the chemical examination of four samples of the deposit.

First sample.—Filtered from the urine of twenty-four hours; mixed, as ascertained in the first instance by means of the microscope, with a very minute quantity of *triple phosphate.*

Bibasic phosphate of magnesia	0·15
Bibasic phosphate of lime	1·85
	2·00

Second sample.—Filtered from urine after the lapse of a day or two; mixed with a small quantity of *triple phosphate.*

Bibasic phosphate of magnesia	0·47
Bibasic phosphate of lime	6·18
	6·65

Third sample.—From urine of twenty-four hours, after the lapse of several days. Admixed with much triple phosphate, as shown first by the microscope, and afterwards by the chemical analysis.

Bibasic phosphate of magnesia	4·30
Bibasic phosphate of lime	5·41
	9·71

Fourth sample.—Separated from six ounces of fresh urine. Deposit very pure.

Bibasic phosphate of lime	1·96
No phosphate of magnesia.	

Now the admixture of the phosphate of magnesia in the first three samples was due solely to the fact, that the phosphate of lime, deposited at first in the pure state, was allowed to remain in the urine until decomposition had commenced, and the phosphate of magnesia and ammonia had, in consequence, become formed. Deposits of phosphate of lime are sometimes contaminated from the same cause with carbonate and oxalate of lime.

These analyses are therefore conclusive as to the composition of this earthy phosphate. In order to show that no error has been committed in them, Dr. Hassall appends the process adopted. That the deposit in question really consisted of a *phosphate*, was first repeatedly determined by the action of a solution of nitrate of silver; the crystals, when touched with this reagent, assumed a bright golden-yellow colour. After having been separated and washed in distilled water, the phosphate was ignited to free it from animal matter, urea, &c., and weighed. It was then dissolved in hydrochloric acid; ammonia was added until a permanent precipitate formed; this was redissolved by the addition of acetic acid. First the *lime* was precipitated from the solution by oxalate of ammonia, and afterwards the

magnesia as follows: Chloride of ammonium was added, then ammonia in slight excess, and, lastly, phosphate of soda. The oxalate of lime formed was converted into carbonate of lime in the ordinary manner, and the phosphate of ammonia and magnesia into the pyrophosphate of magnesia; these were then weighed separately, and the amounts of the bibasic phosphate of lime were determined by the usual calculations. The results obtained corresponded very closely with the original weights of the ignited phosphates subjected to analysis. The analyses, therefore, show that the crystallized phosphate of lime is atribasic phosphate, containing two atoms of lime, and, most probably, one of water.

Form of the crystals.—The size, form, and arrangement of the crystals of phosphate of lime, as they occur in human urine, vary greatly, but the peculiarities are in all cases sufficiently characteristic to allow of the ready identification of this phosphate by means of the microscope. The crystals are either single or aggregated, most frequently the latter, forming glomeruli or rosettes, more or less perfect. Sometimes they are small and needle-like, and then they frequently form, by their crossing and union at right angles, glomeruli or spherules. Sometimes the crystals are thin and flat, having oblique or pointed terminations. Very frequently, however, they are thick, and more or less wedge-shaped, and united by their narrow extremities so as to form more or less complete portions of a circle; the free larger ends of the crystals are usually somewhat oblique, and the more perfect crystals present a six-sided facette. Dr. Hassall has never yet met with these crystals having both ends perfect, owing, he believes, to the tendency which they have to crystallize from a centre in rosettes. When these crystals are kept in the dry state for a long time, they not unfrequently break down and crumble into powder.

The late Dr. Golding Bird, in his work on 'Urinary Deposits,' has given a representation of some crystals which he has denominated "*penniform*," describing them as consisting of a variety of the magnesian phosphate; the crystals figured do, however, undoubtedly represent a modification of those of *phosphate of lime*. Although Dr. Hassall has elsewhere pointed out this error, most recent writers on the urine still persist in describing these crystals as a variety of the phosphate of ammonia and magnesia.

On the frequency of their occurrence.—Dr. Hassall finds, as already stated, that phosphate of lime, in the form of crystals, is of much more frequent occurrence in human urine than the triple phosphate, excluding those cases of the presence of the latter phosphate which are due to the decomposition of the urea of the urine subsequent to its emission. He has met with deposits of crystallized phosphate of lime in some hundreds of urines, and in many different cases; it is therefore not a little remarkable, from the frequency of its occurrence, and the peculiarities presented by the crystals, that it should have been so long overlooked. The microscope, therefore, furnishes us, in most cases, with the ready means of detecting the presence of deposits of phosphate of lime, as of so many other urinary deposits.

Characters of urine depositing crystallized phosphate of lime.—The

urine from which phosphate of lime is deposited is usually pale, but occasionally it is high-coloured; the quantity passed is large, and the calls to void it frequent, more or less uneasiness and smarting being occasioned by its passage, at the neck of the bladder, and along the course of the urethra: its specific gravity varies greatly. Taking the whole quantity passed in twenty-four hours, it is usually below the average, nevertheless the animal matter and urea are absolutely in excess. It is generally feebly acid, often decidedly so when first voided, the greater part of the phosphate of lime becoming deposited while the urine still retains some degree of acidity; it, however, speedily becomes alkaline, owing probably to the excess of mucus contained in it. Sometimes the crystals of phosphate of lime are thrown down from the urine before its escape from the bladder; ordinarily, however, the urine is bright and clear when passed, and the crystals are not formed until some time after it has been voided. In collecting this phosphate for analysis, the object being to procure it in as pure a state as possible, and as free from phosphate of ammonia and magnesia, oxalate and carbonate of lime, it should be separated from the urine very soon after it has become deposited, and before decomposition has had time to set in.

On the pathological importance of deposits of phosphate of lime in human urine.—Of the pathological importance of excess of phosphate of lime in the urine not a doubt can be entertained, but certain reasons and facts may be advanced to show that deposits of that phosphate have a deeper pathological significance than those of the phosphate of ammonia and magnesia. The proof of this is the more necessary, since writers on the urine are in the habit of describing, as well as of treating, deposits of the earthy phosphates collectively, and without distinguishing between them; this course was natural enough so long as they were unacquainted with the fact that deposits of phosphate of lime, in the state of crystals, are of frequent occurrence, or so long as they mistook them for a variety of the ammonio-magnesian phosphate. One reason why we should be disposed to attach greater importance to the excess of the calcareous than the magnesian phosphate, is that most of the phosphoric acid of this last phosphate, and all the magnesia, are derived from *without*, being contained in the various articles consumed as food; while for the phosphate of lime, we have in the system—in the teeth and bones, and also in the nitrogenous tissues—sources containing some pounds weight of this phosphate.

That the osseous system is subject to disintegration is certain, and that the extent and rapidity of this differ remarkably in different cases is equally so. This is shown by the simple fact alone, of the early and rapid decay of the teeth in many persons. For this general reason therefore only, we should, *à priori*, be disposed to attach greater importance to the occurrence of deposits of phosphate of lime than those of phosphate of magnesia.

Other facts tending to confirm this view are—first, that while deposits of phosphate of lime are frequently met with, those of phosphate of magnesia (not the ammonio-magnesian phosphate) are exceedingly rare; and second, that the calcareous is of more difficult

solubility than the magnesian phosphate. This last circumstance explains probably why phosphate of lime falls as a deposit from acid urine, while phosphate of magnesia remains in solution.

The particular or special reasons for regarding deposits of phosphate of lime as of more moment than those of the triple phosphate, are derived from direct pathological observation. Dr. Hassall has observed that when this deposit occurs, it is very apt to be persistent; and when it has disappeared, to return whenever the health is reduced from any cause. He has also noticed, that when it is persistent, it is usually associated with marked impairment of the health, and this often where organic disease does not exist. The prominent symptoms in one case of calcareous phosphatic deposit which he has had under observation for some years, were—great disorder of the digestive organs, frequent and distressing headaches, occasional vomiting, debility, emaciation, great irritability of the nervous system, sexual powers weak, pulse slow and feeble, skin cold, urine in excess, of rather low specific gravity, acid when passed, but soon becoming alkaline, micturition frequent, with irritation at neck of bladder and in the course of the urethra; teeth much decayed. It should be stated that there is in this case a very slight tendency to paralysis of the right leg, as shown by an occasional sensation of coldness in the limb, and slight deficiency of power in it at times only. This symptom is, however, by no means a constant or necessary one in such cases.

If these views of the pathology of phosphate of lime be correct, we should expect to find an excess of that phosphate in the urine in great and rapid waste of tissue, during the rapid decay of the teeth, and in cases of mollities ossium. That there is an excess of the calcareous phosphate in the urine in these cases, is shown alike by observation and analysis.

It is obvious from this imperfect sketch, that much remains to be effected in regard to the pathology of phosphate of lime; but now that the frequency of its occurrence in human urine as a crystallized deposit is made known, its pathology, apart from that of the triple phosphate, will no doubt be specially considered.

It will be apparent from the following quotation, that the late Dr. Golding Bird regarded deposits of phosphate of lime as of more consequence than those of the triple phosphate: "The pathological state of the system accompanying the appearance of deposits of phosphate of lime is analogous to that occurring with the triple phosphate; indeed, as has been already observed, they often, and in alkaline urine always, occur simultaneously. So far as my own experience has extended, when the deposit has consisted chiefly of the calcareous salt, the patients have appeared to present more marked evidence of exhaustion, and of the previous existence of some drain on the nervous system, than when the triple salt alone existed, unless its source is strictly local."

It should be remembered that these remarks of Dr. Bird refer to deposits of phosphate of lime in the *granular state*, and not to the crystalline deposits, with the occurrence of which he was unacquainted. The author has already stated that, according to his ex-

perience, the granular calcareous phosphatic deposits are much more rare than the crystalline.

It follows from these observations and investigations:

1st. That deposits of *crystallized* phosphate of lime are of frequent occurrence in human urine, much more so, indeed, than those of the amorphous or granular form of that phosphate.

2d. That the crystals present well-marked and highly characteristic forms, whereby the identification of this phosphate, by means of the microscope, is rendered easy and certain.

3d. That there is good reason to believe that deposits of phosphate of lime are of greater pathological importance than those of the phosphate of ammonia and magnesia.

ART. 75.—*On the method of detecting the presence and estimating the quantity of Sugar in Diabetic Urine, by concentrated sulphuric acid.* By Dr. JAMES M'GRIE, of Glasgow.

(*Glasgow Med. Journal*, April, 1860.)

A considerable variety of methods has been given by different writers on urinary diseases, for testing diabetic urine, and estimating the quantity of sugar contained in any given specimen. The sense of taste is perhaps the readiest means of ascertaining that saccharine matter is present in urine, and evaporation gives an approximate estimate of the quantity. Trommer's test is now most commonly employed, and the improvements made upon it by Barreswill and Fehling enable us to employ it not merely for the qualitative, but also for the quantitative determination of sugar in the urine. The fermentation test, also, is one fitted to give satisfactory results.

Having been engaged in 1849 in the examination of diabetic urine, Dr. M'Grie has frequently tried all the tests usually employed, and among others that of Pittenkofer, with bile and sulphuric acid. At that time there was no notice of Runge's test in Dr. Golding Bird's work, though it appeared in a subsequent edition. Runge only contemplated the production of a blackish colour by applying dilute sulphuric acid to diabetic urine; while Pittenkofer employed it along with bile to produce a violet colour. Neither of these methods affords satisfactory results. "Grape sugar," says Thudichum, "is not influenced by dilute acids, and not blackened by concentrated sulphuric acid. If grape sugar, dried at a temperature of 100°, is mixed with one and a half times its weight of concentrated sulphuric acid, it dissolves, and forms with the acid a combination which is an acid itself, and has been called sulpho-saccharic acid." However just this observation may be in reference to dried grape sugar, it does not apply to that form of sugar found in diabetic urine. When contentrated sulphuric acid is added to an equal volume of diabetic urine, and heat applied to ebullition of the mixture, the following changes occur:—

First, the fluid becomes blackish, and soon passes into a state of inky blackness. As soon as ebullition commences, the mixture begins to froth up, and continues to be covered with a layer of froth so long as the boiling continues. This layer of froth also remains after the

mixture is cooled. In no other kind of urine except the diabetic are these appearances manifested. After the boiling has been continued for a short time, besides the intense black colour, when the fluid is closely examined, there will be found copious evolution of carbonaceous particles. The high specific gravity of the fluid in which these fine black particles are suspended prevents their being deposited as a precipitate till it is largely diluted with water. In ordinary samples of diabetic urine a copious precipitate is speedily deposited on the addition of water. The precipitate should now be thoroughly washed on a weighed filter, till all the acid is removed and nothing but the pure carbon remains on the filter. After being carefully dried and weighed, the excess of weight of the filter containing the carbon over the weight of the filter without the carbon, will give the amount of carbon contained in the sugar; and when this quantity is found, it is easy to calculate the weight of the sugar. The dried precipitate on the filter will be found in the form of numerous small pieces of jet-black carbon, which may be collected, and, by combustion, will be dissipated in the form of gas, without leaving any solid residue.

It may be objected to this test, that there are other kinds of urine which, when boiled with sulphuric acid, develope appearances somewhat analogous, if not altogether identical with those produced by diabetic urine. It is true that albuminous urine, when boiled with strong sulphuric acid, gives a deep, rich brown colour, approaching to black; but it presents none of the peculiar phenomena which we have noticed as accompanying diabetic urine when treated in a similar manner. The colour is different; it does not froth; and when diluted with water, there is no deposit of black, carbonaceous matter, but the deep-brown colour merely becomes less deep in shade.

Any probable fallacy as between albuminous and diabetic urine, will, if the following method is adopted, be completely dissipated. Let the urine be first acidulated with NO^5, and then boiled, when, if albumen is present, it will become coagulated, and may be removed by filtration; then proceed with the test as described above.

The author has seen this test fail to develope the characteristic phenomena when applied after the urine has been kept a sufficient length of time to admit of decomposition taking place. A sample of urine which has already been found by Trommer's or some other test to contain sugar, may, after it has stood some time, be tested by sulphuric acid, and will probably fail to produce any of the characteristic reactions. It will be found in all such cases that decomposition has begun, and not only this, but every other test will fail. The precaution ought to be taken to have the urine operated upon as fresh and recent as possible, when embarrassing failures of this kind will be avoided.

The *modus operandi* of the sulphuric acid in its action on grape sugar is extremely simple and well defined. The sugar consists of $C^{12}O^{12}H^{12}$; that is, twelve atoms of carbon are combined with twelve atoms of HO or water. Strong sulphuric acid has a sufficiently strong affinity for water to decompose the sugar and remove from it all the elements of HO, and leave the insoluble carbon disseminated in fine

particles through the mixture; and whatever action it may have upon the other constituents of the urine, it does not give rise to any other insoluble compound, if the necessary precautions have been taken at the outset to remove the mucus by filtration, and the albumen, if there is any present, in the manner indicated above. In some specimens of high-coloured and concentrated urine, when there is a considerable quantity of animal extractive and colouring matter, the action of the sulphuric acid may develope a small amount of blackish particles, which, when treated in the same way as the carbon of diabetic sugar, are easily distinguished from it. The author affirms that there is no other kind of urine which comports itself in the presence of sulphuric acid in a manner analogous to diabetic urine. Grape sugar, in the solid state, is dissolved in SO^3, but in solution in the urine is decomposed by it. When treated with caustic potash and heat, the smell of burnt sugar is evolved, the solution becomes brown in colour, and glucic and molassic acids are produced. In the crystallized state it contains, besides the constitutional elements of water, two equivalents of water of crystallization, which are dispelled by a temperature of 212°. When the temperature is raised to 284°, three equivalents of constitutional water are dispelled, and caramel is produced; but it is only when in a state of solution that sulphuric acid removes all the constitutional elements of HO. Of the ordinary tests Trommer's is preferred by some, Cappezuoli's, and the fermentation test by others. The sulphuric acid test is one which, if deemed worthy of a trial, will, in point of simplicity in manipulation and certainty in its results, be found of much value.

Art. 76.—*On Chylous or Milky Urine.* By Dr. C. E. Isaacs.

(*Brit. Amer. Journal*, May, 1860.)

The 'Transactions of the New York Academy of Medicine,' vol. ii, part iv, contain some interesting remarks upon a rare form of disease, of which the pathology is not definitely settled. The two illustrations given occurred at the Seamen's Retreat, Staten Island, under the care of Dr. T. C. Moffatt, chief physician of that institution.

Case 1.—A Spaniard was admitted November 13th, 1858, for abscess of the scrotum. He had noticed three years previously that his urine was occasionally of the colour of milk, and remained so for several years. It is now noticed that the urine voided after meals is always milky. When retention sometimes occurs for a few hours, the ejection of a long, fibrinous coagulum precedes the flow of milky urine. He had had gonorrhœa and syphilis, and had taken large quantities of mercury and iodide of potassium. Long-continued pain in the lumbar region preceded the first apparent change of colour in the urine. The early morning urine is clear, but becomes milky after breakfast.

When subjected to examination, it was found to coagulate by heat, nitric acid, and alcohol. That the milk-white colour of the urine was due to an intimate mixture of oily matter with albumen, forming a kind of emulsion, was proved by agitating a small quantity of the urine with sulphuric ether. The urine instantly separated into two distinct portions; the upper layer, of

a deep-yellow colour, being composed of the ether; while the inferior layer, brownish-yellow and semi-transparent, consisted of albumen. The upper layer left, on evaporation, a copious deposit of oil. No red globules or tube-casts were discovered, after very careful examination. To sum up the various results of chemical tests and microscopical examinations, it was conclusively exhibited that the principal normal constituents of the urine, probably all of them, were present. The same results were obtained from different specimens. He took gallic acid, ℈j to ʒss, three times a day, but was sent home before any beneficial result that might follow could be studied.

Case 2.—A native of Santa Cruz, a sailor, who had been occupied for five days in taking in a cargo of spirits of turpentine, was admitted in 1855 for hæmaturia, and was soon after discharged cured. In a subsequent voyage, while at Sidney, N.S.W., he was under treatment for periosteal swelling of the tibia, and ten weeks before sailing he experienced constant desire to urinate, and noticed that small clots of blood at times interrupted the free flow of urine. Soon after sailing, he observed that his urine was milky, and he was obliged to urinate about twenty times in the twenty-four hours. The urine became like solidified jelly five minutes after it was voided; fibrinous lumps and strings passed with the fluid, some of them yellow, others reddish, varying in size from a pea to a large pigeon's egg; all contained myriads of red globules. When the urine was allowed to stand, a red layer formed at the bottom of the vessel. The odour of the urine was, in both cases, that of moist clay. No oil globules were detected under the microscope in the fluid portion that remained after the separation of the coagulum. Nitric acid produced coagulation, but this result was not attained by the application of heat until several weeks afterwards. He was put upon the use of gallic acid, and afterwards upon tannin and alum. In October, 1858, he passed a gallon a day; and this quantity was not influenced by diet or exercise. Gradually, under the use of good diet, the milky appearance disappeared and the coagulum became very slight; but he finally passed into a typhous condition, which terminated in death early in 1859.

Post-mortem examination of the kidneys showed them to be in a healthy condition.

In a case reported in the 'Medical Times and Gazette,' by Dr. Bence Jones, the patient had passed milky urine for twenty-five years. Dr. Golding Bird relates the case of a woman who passed milky urine on rising from bed. Other cases are reported by different writers. The cause is, probably, exposure to external influences, and in the second case mentioned by Dr. Isaacs, perhaps inhalation of spirits of turpentine, while so far as has been observed, it is a disease of hot climates. Dr. Isaacs arrives at several conclusions, founded on recorded cases and opinions:—1. That the disease may continue for months and years without much apparent injury to the general health. 2. That there may be intermissions of healthy conditions of the urine, perhaps in the same day. 3. That there may be little or no emaciation, and the patient may abound in adipose tissue. 4. That, generally, the fatty matter appears in the urine after eating. 5. That astringents, and especially gallic acid, seem beneficial, but that the disease is very rarely under the permanent control of medicine. 6. That in two cases examined, the kidneys were healthy. 7. That there were probably no organic lesions of any other organs.

We coincide with Dr. Isaacs in the remark, that the number of

cases recorded has been so small that the true pathology cannot yet be readily determined.

Art. 77.—*A Case of Periodical Hydruria.*
By Professor Scanzoni.

(*Würzburger Med. Zeitschrift*, Bd. ; and *Med. Times and Gazette*, Oct. 20, 1860.)

Case.—A Russian lady, æt. 30, and of strong bodily frame, who had always menstruated regularly, and had borne six living children, was seized four weeks after her last confinement, in 1856, with a sudden and profuse discharge of limpid, uncoloured, scentless fluid, which at the end of three days spontaneously disappeared. Four weeks later a very slight menstrual discharge appeared, which only continued for a few hours, and was followed by another rush of watery discharge, which, as before, lasted for three days. From this time the menstruation became very irregular, ceasing sometimes for two or three months, and only lasting when it did come on usually for half a day, the small quantity of discharge being also remarkably pale and fluid. But immediately after the cessation of menstruation, the watery discharge began to appear with regularity, so that during two years it manifested itself nearly every four weeks. No pain or other symptoms either preceded or accompanied the discharge. The quantity of this clear fluid was always very considerable, and was estimated by the patient at from six to eight quarts (*maass*). Its discharge was almost uninterrupted, but sometimes it passed out with temporary increase. After many attempts at treatment in Moscow, she repaired to Paris, and consulted many practitioners, and among others Jobert, who, as well as his predecessors, regarding the affection as a hydrometra, besides giving various internal medicines, applied the actual cautery three times to the vaginal portion of the cervix uteri! As after a six months' treatment she found herself nowise improved, the patient consulted another practitioner at Kreuznach, and thence she came to Scanzoni at Würzburg. With the exception of an inconsiderable enlargement of the uterus, and a slight degree of anæmia, he could discover nothing abnormal in her appearance. After a while he had an opportunity of seeing her during one of the discharges, and, examining her again, he convinced himself that there was no material enlargement of the cavity of the uterus. He now became very doubtful whether the fluid was really secreted from the uterine mucous membrane, as all whom she had hitherto consulted had believed it to be; and an analysis of some of the fluid by Scherer, proved it to be nothing but *very aqueous urine*, since the analysis furnished unmistakeable urea and uric acid. After nearly four days' duration, the discharge ceased of itself; the patient, much astonished at the conclusion he had come to, remaining six weeks longer under Scanzoni's treatment. During the whole of this time he ordered her to drink the Wildungen chalybeate water, and at the very next expected period the watery secretion did not reappear. Before her departure he recommended a long-continued use of iron. He saw her first in the summer of 1858, and in March, 1859, she wrote him word that for the last five months she had had none of the discharge, while menstruation had become more abundant and more prolonged.

In seeking for an explanation of this extraordinary case, Professor Scanzoni believes that he is correct in regarding it as a hypercrinia of the kidneys, depending upon a hyperæmia of the urinary system, induced by the condition of the menstruation. The history of the case exhibits the causal connexion between the excretion of urine and the menstruation; and it is not to ven-

ture too much in ascribing the spare and brief menstrual discharge to a diminished congestion of the genital organs, a hyperæmia of the kidneys, due to no ascertainable cause, taking place simultaneously. That this disturbance of the relations of the circulation may have been accompanied by some anomaly of innervation on the part of the urinary system, is rendered probable by the involuntary and uninterrupted flow of urine which took place, and which could only be explained by a paralysis of the neck of the bladder, however temporary this might have been. Lastly, we have to remember the anæmic condition of the patient; for although it existed in a slight degree only, it is highly probable that it influenced the circulatory disturbances of the organs in question, and, in part, the watery condition of the urine. The case, at all events, is deserving of our notice, contributing as it does to our knowledge of the influence which the menstrual process may exercise on the most various functions, and teaching us care in our diagnosis, the absence of which, in respect to this patient, must be considered as very blameable.

ART. 78.—*Case in which there were no symptoms of uræmic poisoning, although no urine was secreted for twelve days.* By Mr. NUNNELEY, of Leeds.

(*Trans. of the Pathological Society*, May 20, 1860.)

CASE.—On the 10th of February last, the person whose case is here related, ate a hearty meal, being then as well as usual; during the evening she was seized with severe vomiting, and some pain in the back and body, which continued all night. At six o'clock on the morning of the 11th she passed water, and also a very small calculus, not much larger than a pin's head. After this no more water was passed. The vomiting continued, and the following day (the 12th) such remedies were prescribed as had on former occasions relieved her when passing renal calculi, of which she had had during the last eighteen months two or three attacks, when calculi of considerable size had been voided. On the morning of the 13th Mr. Nunneley saw her. The vomiting of grass-green biliary matter had continued incessantly. She was free from pain, except that caused by the intense acidity of the ejected matter. There was no tenderness or fulness of either the back or the abdomen. The pulse was natural; and except that no urine had been passed, there was an entire absence of symptoms. The catheter introduced showed that the bladder was empty and firmly contracted. The bowels were constipated. Calomel, with opium and alkaline purgatives, were administered, and frictions of croton-oil to the back were used, and continued without any effect for three days. A large blister was then applied over the loins. It produced a copious discharge of serum having a decidedly urinous smell. As the bowels were obstinate, elaterium, which on a former occasion had been most beneficial to her, was ordered. Several doses had to be given before it acted, when at length the bowels were copiously relieved, and kept well acted upon for four days. As the vomiting continued incessantly, the elaterium was omitted. The tincture of the muriate of iron and tinctura lyttæ were tried at the suggestion of Dr. Chadwick, who now saw the case with Mr. Nunneley. As no good resulted from this, and as the sickness was made even worse, creosote in drop doses was given with carbonate of potash, and turpentine enemata were used. By these means the sickness was to some extent allayed, but no other effect produced. On the sixth day a slight subsultus of the tendons of the wrist was noticed, and afterwards there was for three or four days a decided muscular jerking of the shoulders and arms,

which, however, subsided two or three days before death, and was nowhere perceived but in the upper extremities. About the same time she became dull and indisposed to move, as she said from the sickness, but she was never lethargic. She slept quietly at times, but on the whole was wakeful. On the tenth day another blister was applied to the back, the serum from which was caught in a cloth. Not only had it a strong urinous smell, but crystals of nitrate of urea were obtained from it by Mr. Reynolds, whose report, showing the processes adopted, Mr. Nunneley brought forward. It was now her catamenial period. The flow was in all respects natural. She got gradually weaker, and died on the afternoon of the 23d, when Mr. Nunneley was called to see her. He found her dying, but so sensible that she rationally answered a question not one minute before she ceased to breathe. During the illness on two occasions she fancied she could pass water, but none came, and the repeated introduction of the catheter always showed the bladder firmly contracted and quite empty, except on one occasion, the night before she died, when two drops of fluid were obtained, having the colour but not the odour of urine. A cloth was applied to the vulva when she had a motion, but it was never wetted, and the evacuations were carefully examined to see if any urine could have passed. Neither these, the skin, nor the breath, ever had an urinous smell. She was during the whole time perfectly sensible, the pupils were neither contracted nor dilated, but obedient to light; the pulse was not above 80. Indeed, with the exception of the suppression of urine, thirst, and vomiting, she had hardly a symptom of ailment. Whatever she took was shortly, often instantly, rejected. She lived twelve days after the secretion of urine had been totally suspended. A post-mortem examination of the abdomen only was allowed, forty-eight hours after death. Though the weather was cold, the body was still quite warm. There was a large amount of oily fat, both without and within the abdomen; the bladder was most firmly contracted without a drop of fluid in it; indeed, it was almost dry and free from mucus. All the abdominal organs, with the exception of the kidneys, were healthy; they were imbedded in a large quantity of dense fat; both were larger and softer than natural, allowing the fibrous covering to be readily stripped off. The right kidney was not opened, but within its pelvis was felt a large calculus, and on the upper part of its convex edge a deep depression, like an old cicatrix. The pelvis of the left kidney contained several calculi, some of them small like sand, the calyces were much enlarged; the distinction between the medullary and cortical portions was hardly to be detected. Under the microscope scarcely a vestige of the normal urinary tubes could be found, but a mass of epithelial scales, and an enormous quantity of granules, a few broken urinary tubes, most of them without scales, were present; hardly a trace of the Malpighian bodies could be seen. The heart was large, fatty, and rather soft, the mitral valve thickened, and the orifice much contracted; the tricuspid valves were healthy. Mr. Nunneley had known this woman for many years. She was not a healthy person, and had formerly had disease of the bones of the right wrist, and the heart had for some years been diseased. Her father, mother, and one, if not more, sisters, died of diseased hearts, and a brother now living has it affected. She married when thirty years old, and was thirty-three at the time of her death. Eighteen months before this she was delivered of a child, after a long, hard labour, for many weeks before which the legs were much swollen, and the breathing so much affected, that she could not lie down in bed. No advice was, however, sought at the time. Mr. Nunneley saw her two days after her confinement, when he found the lower extremities enormously swollen. There was also

effusion in the chest. She continued most dangerously ill for weeks, unable to walk or lie, passing only a few ounces of thick, puddle-like urine in the twenty-four hours. Nothing appeared of much service until elaterium was freely given; it was continued for some weeks, with so much benefit, that she became as well as she ever had been, attended to her household duties, grew quite fat, and had no illness since, except a sharp attack of periostitis of the tibia, which passed off without suppuration, and also, as before said, the passing of renal calculi two or three times, when she was not ill for more than two or three days.

(F.) CONCERNING THE CUTANEOUS SYSTEM.

ART. 79.—*A critical examination of the disease known as Bronzed Skin.* By Dr. E. B. DALTON, Resident Physician to St. Luke's Hospital, New York.

(*New York Journal of Medicine*, May, 1860.)

From a critical survey of the evidence bearing upon this point, laying especial stress upon those well-attested post-mortem examinations where complete disorganization of the capsules was found unaccompanied by any sign of bronzed skin, Dr. Dalton thinks it reasonable to decide that there is no direct mutual dependence, as of cause and effect, between bronzed skin, with its accompanying symptoms, and a morbid state of the supra-renal capsules. Whether, in some cases, there be some indirect and less important connexion arising out of the anatomical relations of these bodies, he does not undertake to say.

ART. 80.—*On Pellagra in Italy, and more particularly among the Lunatics of that country.* By Dr. E. BILLOD.

(*Journal of Psychol. Med.*, Oct., 1860.)

Dr. E. Billod was commissioned, in January, 1859, by his Excellency the Minister of the Interior, to visit Italy, and report upon the pellagra of that country, in its relations to mental alienation. In the report which, in accordance with his instructions, he has recently presented to the Minister, he records not only the results of his researches in Italy in 1859, but also the results of previous researches which he had made in that country in 1846. The object of Dr. Billod's researches was a comparative study of the true pellagra, considered as a type, and of the affection incident to mental alienation admitted as a variety; to seek the degree of analogy existing between these two morbid species, and to decide, if possible, upon their identity of character.

The results of Dr. Billod's researches, and the conclusions that he has formed, are thus summed up:

1. Pellagra is endemic, in different degrees, in the provinces of Perugia, Urbino, and Pesaro, in the States of the Church, in part of Tuscany (Tuscan Romagna and Mugello), in the Romagna, in Emilia, in the Milanais, and in part of Piedmont; and other parts of Italy seem to have, in this respect, a certain immunity.

2. In the countries where pellagra is endemic, it constitutes one of the most frequent causes of mental alienation among individuals admitted into lunatic asylums.

3. Mental alienation shows itself most frequently in the latter periods of pellagra, and most commonly assumes the melancholic form; but it is also observed at the commencement, and in a maniacal form.

4. The disposition to commit suicide does not perhaps accompany the mental alienation of the pellagra-stricken so often as is imagined; and death by submersion is not commonly, as has been asserted, the form of death which is commonly chosen by the insane pellagra-stricken who manifest a suicidal tendency.

5. The opinion advanced by Dr. Billod, that the cachexy which he has described as being peculiar to the insane is of a pellagrous character, is confirmed by the observations made by him in many establishments, and particularly in those of Florence, Astino, and Turin.

6. Alimentation by maize, with or without modification by *verdet*, according to the general opinion of the Italian physicians, so competent in a question to decide which they are not reduced, as the majority of French physicians, to views purely theoretical, is one of the principal causes of pellagra, but *it is far from being the sole and exclusive one.*

7. The cause of pellagra is, according to the same physicians, complex and variable; that is to say, it results from a combination of many hygienic conditions, of which the use of maize forms but one.

8. Softening of the spinal cord, which Dr. Billod had noted as the most ordinary post-mortem appearance of the peculiar cachexy of the insane, especially in the pellagrous form, is also observed in patients who have suffered from true pellagra, as was demonstrated by Dr. Brierre de Boismont, in four autopsies made by him at the Milan Hospital. The pathological change is not, however, peculiar to pellagra, for it is observed occasionally in various conditions of mental alienation, more or less independent of pellagra.

Art. 81.—*On the Leprosy of the Chinese.*
By Dr. Benjamin Hobson.

(*Medical Times and Gazette*, June 2, 1860.)

In Dr. Hobson's opinion, true leprosy is a specific, constitutional, hereditary disease, peculiar to hot climates. He considers it as an intertropical disease, affecting the Chinese, Hindoos, Mohammedans, Africans, and other people living within or on the borders of the tropics. It does not seem as if it could exist without heat; cold kills it. This is seen in China, where it is confined to the southern provinces. He has had experience both of the North and South of China; and while he has seen a fearful prevalency of leprosy in the South and hot parts of that country, he has not once observed it in the North. It is a common proverb among the Chinese that a visit to the North of China will cure a man of his leprosy. It is known in China under the name of *Ma-fung;* the very mention of which sends a thrill of horror into every one who hears it.

"*Every year*," says Dr. Hobson, "a great number of persons brought their children or friends to my hospital in Canton, to ascertain whether it was the leprosy or not. If I could assure them that it was not, their exclamation of joy and gratitude was very emphatic; if, on the other hand, I was obliged to confess it was unmistakeably the *Ma-fung*, the affliction which such an announcement made was so great, that ultimately I would not give an opinion unless much pressed to do so; but even then the poor creatures would seek to read my thoughts in my countenance. It would be quite impossible ever to forget the doleful appearance of the confirmed leper. He would come almost tremblingly to the dispensary table, and imploringly ask that something might be done for him. He was conscious he was avoided by all, and pitied by none. If taken into the hospital the other patients would leave; if he sat on a chair no one would sit there again until it was well fanned from the foul air; if he touched a bowl, chop-stick, or any other utensil, they were ever after unclean; if a son of a wealthy family became leprous he must be either sent to the leper-house, or kept alone in some secluded part of the house. The wealthy, middle, and poorer classes are by law compelled to expel the poor outcasts to places occupied by lepers only. My boatman's son became affected with this direful disease; he suddenly disappeared, and he was spoken of ever afterwards as dead. I visited on one occasion, a few years ago, the leper establishment outside the city of Canton, supported by the native government. There were nearly 1000 persons permanently residing there, affected with leprosy in all its stages. I went there to make certain inquiries of the head constable, who was himself a leper, and a more horrible place I never entered.

"The result of these inquiries I published in an article contained in the China Hong Kong Branch of the Asiatic Society, a copy of which I have endeavoured in vain to get for reference, my own copy, with all my other papers and books, having perished during the late Chinese war. The following observations I copy from one of my Annual Reports of the Hospital:—'The first appearance of the disease is a red spot appearing on the face, body, or legs—most frequently on the face. This gradually spreads to a patch, which is usually round or in streaks; sometimes these patches unite, and in other cases they are distinct and numerous. On examining these patches, the integument feels thickened, is elevated, and of a dull reddish hue; the skin looks stretched, and is very similar in many cases to the inflamed skin from a blister before the cuticle is raised by the effusion of serum; in others it is smooth and shining. On pricking it, it is found to be usually insensible, and instead of any limpid fluid issuing, as might be supposed from its appearance, blood flows; the ears soon become swollen, thick, pendulous, and permanently red; and as the disease advances the hair falls off from the eyebrows and head; the tendons of the hands and feet contract; the skin ulcerates, and discharges a thin purulent secretion. There are no scales ever visible, and rarely tubercles; the affected parts are thickened, slightly elevated, and insensible to pain and perspiration. The distinguishing characters of the leprosy are the thickened integuments, the reddish hue, elevation of the patches, and its invariable tendency to spread; it is at once recognised in

leprous children by the coarse, thickened expansion of the features, a broad nose, large ears, and a dry, shrivelled skin of the arms and legs. The Chinese consider the disease to be a poisonous breath or wind that has entered the blood, and profess to distinguish thirty-six kinds; but these include some forms of lichen, psoriasis, scabies, and syphilis, &c.'

"The true leprosy is considered by the Chinese to be infectious and incurable. Leprosy is one of the seven causes for divorce, and annuls any previous contract of marriage. They consider the infection runs out in the fourth generation, and to intermarry with such is without danger. If it occurs sporadically, which it certainly does, it is generally regarded as a judgment, or the result of an impure connection with one not knowingly affected with the disease. I do not myself regard it strictly as an infectious disease, that is communicated by mere contact; but it is unquestionably an hereditary one; and considering its disgusting appearance (especially in its worst forms, where the features are distorted, the eyebrows gone, the eyes starting, the nose, lips, and ears broad and coarse-looking, the hands and feet distorted by contraction, and deficient, in some, of fingers and toes, which have ulcerated off, &c.), it is no wonder it is everywhere regarded as an infectious and horrible disease, the contact with which is both feared and carefully avoided. I have not observed the unusual fœtor of the breath or person, mentioned by some writers, nor that it affects males more than females, nor that they have happy and contented faces, nor that want of food or cleanliness is the cause of leprosy, for it is not confined to the middle and poorer classes, but occasionally shows itself in families who enjoy the comforts of life.

"The cause of leprosy lies deeper than science can at present discover. Heat and moisture probably exert a considerable influence in keeping up the disease, if not in producing it. In the lazar-house I saw some women unaffected with leprosy, though their children were marked lepers. The temper and disposition of leprous men and women living in leper-boats were spoken of as extremely bad, and people were afraid of irritating them. I have tried various internal remedies and topical applications without any decided benefit. The seeds of the chaul-moogra, or Charul moogra, Nat. ord. Flacourtiaceæ (Lindley's 'Flora Medica') is the only medicine that I have found in any way beneficial. The disease, as described above, corresponds to what is seen in India, and Dr. Mouat, of Calcutta, drew my attention to the use of the seeds and oil in curing cases of leprosy among the Hindoos. The remedy was not unknown to the Chinese, who import it from the Straits, probably Java, and used it as a secret remedy. The dose we gave was one drachm, twice a day, and the eruption was rubbed occasionally with the expressed oil. Several mild cases were certainly cured after a long-continued use of it. The first appearance of improvement was seen in the eruption becoming less prominent, and red, minute white scales appearing round the circumference and edges, and the central parts gradually assuming the appearance of healthy skin. The seeds were easily procurable, and very cheap; the only drawback was the disgust the patients took to them after a month or two using them. Those who persevered for four months or longer got well; but it was only in the commencement of the disease: the

confirmed cases are quite beyond the benefit of medicine. But, though in this stage an incurable disease, it does not appear to shorten life very materially. I have seen many lepers over forty and fifty years; but it is almost worse than death to be an outcast from society, an object of suspicion and fear, with the consciousness of having a loathsome, incurable disorder slowly preying upon the vitals and strength. And it requires no great stretch of the imagination to conceive of the joy which those poor lepers experienced when they were touched by a superhuman hand, and heard the gracious words, 'I will; be thou clean.'

"From what I have read of the *spedalsk* disease among the Norwegians, I should be disposed to regard it as a disease peculiar to that country, and not leprosy. The leprosy among the Greeks was far removed from its misnomer—elephantiasis; it should be always designated leprosy, or lepra tuberculosa. From Robinson's account of leprosy in India, published in 'Medico-Chirurgical Transactions,' No. X, there appear to be there two distinct varieties of the disease; one with tubercles, the other without them. I am inclined to think it is one and the same disease, whether there be distinct tuberculous elevations or not. Leprosy is modified, as all diseases are, by climate and temperament; and it would add to a better intelligibility of the three names (so often confounded with each other) if lepra was limited in its use to the ordinary well-known scaly disease which it designates; elephantiasis to the remarkable thickening of the cellular tissue and skin of the leg, scrotum, &c.; and *leprosy* to the disease, *sui generis*, which exclusively affects persons dwelling in hot countries."

PART II.—SURGERY.

SECT. II.—GENERAL QUESTIONS IN SURGERY.

(A) CONCERNING INFLAMMATION.

ART. 82.—*On Mechanical Pressure as an aid in the treatment of Anthrax.* By Dr. O'FERRALL, Surgeon to St. Vincent's Hospital, Dublin.

(*Jour. of Pract. Med. and Surgery*, August, 1860.)

IN many instances, notwithstanding the use of free incisions, and the exhibition of stimulants fitted to urge the general and capillary circulation, the diameter of the anthrax will be seen to enlarge, to become discoloured and œdematous, and the condition tending to gangrene manifestly to extend. Under such circumstances, Dr. O'Ferrall has derived little or no benefit from fresh incisions and the ordinary general stimulants. In these cases the firm compression of the margin of the anthrax will promptly check the gangrenous extension, which otherwise may acquire such dimensions, and commit such destructive ravages, as few constitutions can repair. Well-regulated pressure immediately relieves the morbid tenderness of the margin of the anthrax, and the other local phenomena are found rapidly to abate. As a bandage to a varicose leg will, by its mechanical support, promote the capillary circulation, so will pressure of the base of an anthrax induce absorption and resolution, with a result analogous to, though by a mechanism different from what we observe when we apply vinum opii or solution of nitrate of silver to a congested conjunctiva, or administer turpentine in hematemesis. In these cases, though the means differ, the object is the same, viz., to promote and sustain the local capillary circulation. The mode of pressure employed by Dr. O'Ferrall consists in strapping firmly, with soap-plaster spread on thin leather, the red and swollen base of the anthrax, as far as the incisions; the gangrenous portion he treats in the ordinary manner, and at the same time supports the system by generous diet, combined with tonics and diffusibles.

ART. 83.—*On the Delhi Boil, or Arungzebe.*

By Mr. FRAZER, Surgeon to H. M.'s 88th Regiment.

(*Indian Lancet*, July 15, 1860.)

The "Delhi boil," or "ulcer," for it assumes the appearance of the former before it ends in the latter, has been known to be peculiar to Delhi as far back as authentic history can trace, and is called by the natives Arungzebe, after that emperor, who was a victim to this form of disease. Its existence is confined principally to the city of Delhi, being less common in the surrounding district; and at Meerut, about forty miles off, it is unknown. Some places, even in the immediate neighbourhood of Delhi, the natives declare to be perfectly exempt from it; but this may arise in a great measure from the population being comparatively few in number.

Various theories have been propounded as to the causes which give rise to this disease, but they are so vague and unsatisfactory, that none of them can be relied on. Some attribute it to the influence of malaria, but then it prevails most in the winter season when malaria does not abound. Others consider that it arises from an impoverished state of the blood, caused by bad living and impure air; but it occurs in those who live well, occupy good houses, and use all means in their power for obtaining the best of everything, air, exercise, and houses included.

The natives agree in the theory of its arising from the use of the water of Delhi, which is impregnated with saline salts, chiefly nitrates. Mr. Frazer is inclined to adopt this hypothesis.

The author's object is to show the rise and progress of the disease in the 88th Regiment; but this he can only do imperfectly, not having been with that corps prior to February, 1860. The regiment arrived in Delhi in the month of February, 1859. In June the men began to be affected with troublesome sores, which appeared in different parts of the body. These were found to be most intractable, resisting all treatment; and the number of men affected became greater as the season advanced, and their greatest increase was from December 1859 to March 1860. They are now (May) on the decrease, having begun to be less frequent in April. Since about June 1859, to April 30th, 1860, as many as 114 soldiers have had Delhi ulcers, and many of the officers, women, and children. A number of the soldiers have had four readmissions into hospital from this annoying disease, which spares neither race, age, or sex, and causes great disfigurement.

It begins by the gradual formation of a reddish patch, raised and hard in the centre, over which the skin, at first smooth and shining, puts on a scaly appearance, becoming fainter towards the border of the spot. In the centre is a small pimple; after a time a brownish crust forms, which is somewhat more depressed than the surrounding surface; it becomes gradually larger, particularly if picked or irritated, and it is accompanied by pain and sometimes a troublesome itchy soreness.

While this is going on, the surrounding skin becomes of a shining, light-purple colour, and scaly, gradually becoming fainter in scaliness and colour as the distance from the centre is increased. If the crust is

removed, a raw, irregular surface is observed, which bleeds freely if roughly handled. It secretes sometimes a thin, transparent secretion, or a thin, grayish-brown fluid; this cakes on the surface and forms the crust, and the ulcer goes on spreading. It is usually of an irregular circular form, but it presents itself in all shapes.

Sometimes a thick crust of a grayish-white colour forms, and the ulcer underneath it is smaller, and has not such a tendency to spread, as in the brown crusted variety. This, however, may arise from being less picked at and irritated by the patients themselves. The raw surface consists of flabby, irregular, fungoid-looking granulations, which appear more luxuriant in the centre, and are tender to the touch. When kept clean and dry, the ulcer very quickly forms what appears to be a new skin, beginning in the centre and extending to the edge; but it seems as if it could only advance to a certain distance, for a raw, watery line of demarcation separates it from the surrounding tissue. The centre is now hard and dry, like parchment, and pressure discovers that it has nothing adherent to it underneath. If removed by a poultice, the raw surface is discovered to be depressed in the centre, and secreting the thin peculiar fluid, which, if left alone, would form a thick, brown, dirty-looking crust, with a well-defined watery line of demarcation between it and the sound skin; becoming, if the sore is situated on a part that admits of much motion, a deep sulcus.

When the Delhi ulcer heals up, it leaves a cicatrix, depressed in the centre, with raised and slightly indurated edges, and a purple, scaly surface. It soon breaks out again, accompanied by the appearance of some new ones in another place. They are more common on the upper extremities and face than on the lower limbs, and are more rarely observed on the trunk.

While they are in progress no trace of constitutional symptom are observed. In some the gums are pale, in others morbidly red, and the alvine evacuations and urine present no unusual appearances.

The *treatment* is chiefly local. Various remedies have been employed by different practitioners, each with some appearance of success. These are poultices, water dressing, blisters, tincture of iodine, solutions of sulphate of zinc and copper, nitrate of silver, and red precipitate.

Ointments, such as the nitrate of mercury, red precipitate, iodine, creosote, and charred root of the castor-oil plant.

Constitutional treatment has consisted in giving Iod. Potass. Liq. Arsenicalis, lime-juice, aperients, alteratives, mineral acids, and tonics of various sorts, all of which are said to have appeared to do some good for a time.

The author has found that, after the removal of the crust (unless it be an open sore), touching the diseased part, including a small portion of the surrounding sound skin, with potassa fusa was an excellent plan. On separation of the eschar, a clean-looking sore, secreting good healthy pus, was the result, which filled up readily, contracting from the edges. Such constitutional treatment was adopted as the appearance and state of health of the patient indicated. He has tried nitric acid and the solid nitrate of silver to the entire surface of a sore, but these applications formed hard, smooth, parchment-like crusts, without penetrating deeply into the diseased part, which seems to be necessary to the forma-

tion of a healthy sore, and the fresh step in setting up the healing process of the ulcer.

Next to the potassa fusa, he found the sulphate of zinc in strong solution or fine powder was most efficacious in destroying the diseased surface and producing a new and healthy sore. He has tried the red precipitate in powder and ointment; it kept the sore clean and healthy-looking, but favoured the formation of the dry, parchment-like surface, under cover of which the unhealthy secretion was reformed.

The solid nitrate of silver appeared to do good when used in touching the line of demarcation, but the hard scale which it formed had to be removed daily by a poultice, otherwise the mischief went on underneath it.

Notwithstanding all modes of treatment, however, they certainly fail in making a thorough cure of the disease which shows itself in the formation of Delhi ulcers, so long as the subject of the disease remains in Delhi. It may become milder—may cease for a time—or appear to wear itself out, but change of air or climate, and that only, effects a complete eradication of it from the system.

(B) CONCERNING WOUNDS AND ULCERS.

ART. 84.—*On the Secondary Union of Wounds.* By M. JOBERT.

(*Jour. of Pract. Med. and Surgery*, July, 1860.)

In addition to the two universally admitted modes of cicatrization, viz., *union by the first intention* and *granulation*, M. Jobert describes a third form, which he denominates *secondary*. A few cases will sufficiently illustrate what is meant.

A *commissionaire*, in a fall upon an angular stone, inflicted upon himself a wound which divided the upper lip from its edge to the nostril. The lip, entirely cut through, formed two separate flaps, which a surgeon, summoned at the time of the occurrence, joined by a few stitches of interrupted suture; but after a lapse of ten days, the edges of the division were found to have been lacerated by the threads, and when the patient applied for admission into hospital, the lip was œdematous, painful, and the wound covered with a grayish plastic exudation. In this case, M. Jobert preferred resorting at once to the application of a fresh suture, to awaiting the slower process of granulation. Considering it unnecessary previously to pare the edges of the wound, the surgeon brought them into close apposition with two twisted sutures, and a linear scar has been the result.

The second instance of secondary union pointed out by M. Jobert was a case of phlegmon of the bursa which lies in front of the patella, and of the inner side of the knee, occasioned by a fall. An abscess, which had formed in the bursa, was opened; but, despite this operation, inflammation had spread to the adjoining parts, giving rise to diffused suppuration, for which a deep incision became necessary. The cavity containing no shreds of mortified cellular tissue, and being carefully cleansed of its puriform contents, M. Jobert considered it possible to shorten the duration of the disease, and to prevent further separation of

textures, by the combination of pressure with artificial closing of the wound. The knee was therefore surrounded by imbricated straps of adhesive plaster, and in a few days the proposed object was satisfactorily effected.

A third equally rapid cure, by the same method, followed in another case of diffused suppuration of the lower and internal part of the thigh. A wide issue was given to the matter, and here again M. Jobert ascertained that no portion of mortified cellular tissue remained. Having satisfied himself on this all-important point, he united the lips of the incision, and the desired result was obtained.

These facts demonstrate the possibility of the secondary cicatrization of wounds in which, from hæmorrhage, oozing of blood, or any other cause, it may not have been practicable to effect immediate adhesion. It is sufficient, as in M. Jobert's cases, to insert lint into the wound, so as to dessicate its cavity, to withdraw it on the following day, and to close the lips of the incision in the same manner as in the simplest accidental injuries. In extensively diffused suppuration, this method preserves the patient from a formidable cause of exhaustion; but it can be effectively applied only by the removal from the cavity of all mortified shreds of cellular tissue. It is further requisite that the pyogenic membrane formed by the effusion of lymph on the surface of the wound be red, vascular, with scarcely a grayish tinge, as it then may still supply the elements of a solid scar. Secondary union must fail if this membrane is ancient, or, to speak more correctly, if its vessels have ceased to exist. With regard to the most appropriate means of union, they consist, as in immediate union, of the twisted suture, provided no excessive swelling or attenuation of the textures be present, and if such be the case, of strips of adhesive plaster. It is moreover necessary, and M. Jobert considers this recommendation indispensable for ultimate success, to combine permanent dressings with absolute immobility of the diseased parts.

ART. 85.—*On the treatment of Varicose Ulcers and Eruptions by the Bar-Needle and Clasp.* By Mr. STARTIN, Surgeon to the Hospital for Diseases of the Skin, &c.

(*Medical Times and Gazette*, May 26, 1860.)

The advantages of this mode of treatment are said to be—

1st. In the great and immediate relief from pain and irritation in the affected parts; several patients having declared that, as far as feeling was concerned, they believed the sores, &c., had healed before the first dressing was removed.

2d. The comparatively facile, innocuous, and bloodless nature of the operation, as compared with any other operative proceedings for the cure of varix. And,

3d. The rapid healing of the ulcer or eruption.

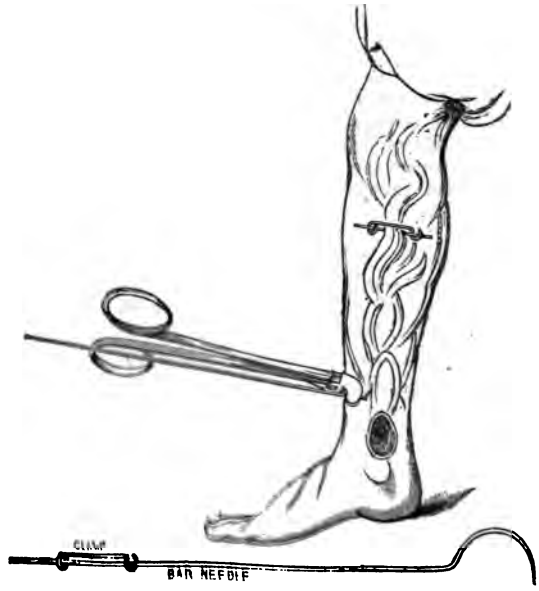
The disadvantages have not yet presented themselves, if we except the greater probability, as compared with complete division of the vein, there exists of a return of the varix when the clot obstructing the vessel becomes absorbed.

The remarks which follow are from a clinical lecture:

"Six or eight months ago," says Mr. Startin, "I contrived a sickle-shaped tubular needle, described in the pages of the 'Medical Times and Gazette,' and since used by Professor Simpson, and many surgeons, for making sutures in deeply seated parts, cavities, &c., not readily accessible to the ordinary needle. This needle I soon afterwards employed for passing a strong wire ligature around varicose veins, as I now do the bar-needle, which closely resembles the tubular needle in shape.

"The situation selected for these operations was the sound skin immediately above the ulcers or eruptions; *i.e.*, one, two, or three inches, according to the case, so as not only to environ and obstruct the large vein itself, but the smaller veins behind it before described. This strong wire ligature passed behind the vein by the tubular needle was fastened in front by twisting over a piece of gutta percha or metal, so as to prevent the skin being cut, and being allowed to remain *in situ* some days, was found to cause the healing of varicose sores.

"In the midst of these experiments, my friend Professor Simpson published his paper on 'Acupressure,' and I immediately saw its adaptation to the end I was endeavouring to accomplish by the tubular needle, and forthwith constructed a needle from a No. 19 knitting-pin,* which I



* Any ordinary workman can convert these pins into the bar needle, the numbers to be employed being Nos. 18, 19, 20 and 21. They will afterwards require to be properly tempered.

employed with such marked success as to induce me to get the instruments which are before you made by Messrs. Savigny and Co.

"They consist, as you will perceive by the instruments and diagram, of six or eight inches of No. 19, 20, or 21 steel wire, properly tempered, so as to bend and yet break short when required; one end being ground to a triangular point, and bent into a curved form of different sizes, to the extent of two or more inches of its pointed extremity, so that the needle represents a sickle with a long handle, the curved part being constructed to pass under and around the veins, the other straight portion or stem to form three or more bars. The point of this needle should project the sixth of an inch above the wire of the stem, and, as before said, the temper of the steel requires to be regulated so as to permit it to bend, and yet break short if pressed against any solid resisting body, as the pair of forceps also shown in the diagram. I have found some difficulty in obtaining the exact tempered steel required, so that were it not better to avoid a multiplicity of instruments, it might be preferable to direct the needle to be made soft enough to be divided at the required place by cutting nippers, if such cutting portion could not be added to the present forceps. These forceps, you will observe by the diagram, somewhat resemble the ordinary tooth-forceps, save that their descending blades are made to fit accurately by plane surfaces, excepting where two grooves cross them at acute angles, one of which grooves is to hold the needle for insertion beneath the vein, the other for withdrawing it when its point has passed the skin.

"By reflecting on the shape of this needle, it will be seen that when its curvature has passed the vein, that its straight portion will compress the part to which it is applied with considerable force, which I have practically found quite sufficient to intercept the flow of blood through the vein, and secure the obstruction of the vessel in all cases where much adipose tissue is not present, or where the vein is of medium size only; but, in the event of either of these occurrences, or, indeed, in many instances, for additional security during the first ten or twelve hours, I have latterly used the second part of the contrivance, which I have called the clasp. This consists of a piece of tinned iron wire, varying in length and strength to suit the curvature of the needle and consequent length of the bar employed and left beneath the vein. One end of this clasp, as seen in the drawing, consists of a small circular ring or eye, and the other of a hook of corresponding size.

"I have now, I fear not too intelligibly, described the bar-needle and clasp, a simple yet, I believe, most efficient apparatus, which, if I mistake not, is destined to occupy as wide a sphere of utility in surgery as glycerine—an introduction of mine sixteen years ago—has held in therapeutics; for this needle is doubtless applicable to various other purposes than those indicated.

"It may be mentioned that this instrument seems to be adapted to the treatment of aneurism by arterial compression; to the operation for the radical cure of hernia for closing the ring; to the treatment of many forms of nævus; and as a readily applied tourniquet, either before operations or after arterial wounds or hæmorrhage. In the latter instance I have once successfully employed it,—viz., in the case of a schoolmistress residing at Peckham, who is suffering from fungoid tumour of the breast,

from which she lost a large amount of blood daily, reducing her to a hopeless condition; three bar-needles, introduced at different parts of the base of the breast, and the clasp applied, have not only arrested the bleeding, but have produced a sloughing of the diseased mass, thus conveying a hint which, when a more favorable case offers, I shall not fail to turn to account. I have also used the bar and clasp with success, instead of Professor Simpson's wire seton, in hydrocele.

"Little more than a month has elapsed since I substituted this apparatus for the tubular needle and wire ligature in the treatment of varices, and I have already employed it in nearly thirty cases in public or private practice with a degree of success which has followed no other treatment with which I am acquainted, as the examples about to be cited will testify; but, to prevent disappointment, let me earnestly request those who adopt my suggestions to take especial care that no complications exist in the cases selected; but that varicose ulcers and eruptions, and varicose veins pure and simple, are alone to be considered amenable to the treatment recommended, and that any specific or other cachexy will render the procedure worse than useless. I must also beg it will be remembered that as yet I cannot decidedly pronounce on the effects of the bar and clasp upon very deep or chronic indurated ulcers, such as run the round of the London hospitals, and nearly environ the limb; nor has sufficient time yet elapsed, nor have my applications of the instrument been numerous enough, to enable me to speak with much certainty upon its ultimate effect upon varices and very chronic varicose eruptions, with much cutaneous hypertrophy; such cases, however, will claim my early attention, and a record of the result in future clinical remarks.

"The following is the method employed in operating with the apparatus above described:—The patient being placed in good light, with his limb upon a chair, the bar-needle is to be seized by the forceps, near its curvature, taking care that its stem rests in the horizontal groove of their blades, its spare portion passing between the handles of the forceps so as to be grasped with them by the hand of the operator—as seen in the diagram. The point of the needle is then to be raised with the hand until it becomes nearly perpendicular to the spot at which it is to be inserted, when the needle is to be depressed so as to occasion its curve to pass deeply behind the varicose veins and the smaller dilated plexus behind it, when a little pressure with the left hand on the place where the needle projects on the opposite side of the vein will occasion its point to pass through the skin, when it is to be grasped by the forceps, and a little pushing with one hand and traction with the other, will bring the stem of the needle into the position it is to occupy, *i. e.*, within two inches or thereabouts of its blunt extremity, so as to allow half an inch or more to project on each side of the vein, as shown in the diagram. This portion of the needle now requires to be broken off, which is readily done if the steel be properly tempered, by taking the needle's stem between the blades of the forceps, half an inch or so from the point at which it first penetrated the skin, when pressure from the left to the right or from above downwards, made by moving the curved end of the needle, will break off the stem at the desired point, and leave the bar behind the vein with about half an inch projecting out of the skin on either side. The clasp is now to be applied, if required (see diagram), by passing its ringed extremity

over one projecting side of the bar, carrying its middle portion, previously bent to fit, and yet gently compress the parts across the vein, when its hooked extremity may be passed behind the other projection of the bar, and the whole apparatus becomes firmly fixed like the pin in a brooch. By this procedure, of course, all circulation in the vein is arrested, and a coagulum forms on both sides of the bar, which may be rendered more or less permanent by retaining the bar a longer or a shorter time.

"In my first essays with the tubular needle, four, five, or six days were the periods adopted for keeping the ligature inserted; but latterly I have found fifty to sixty hours quite sufficient, whether in the case of an ulcer, eruption, or simple varix, though the last requires the longest insertion of the needle.

"As the *modus operandi* of the bar-needle upon an ulcer is to check very materially all secretion from its surface, so that it may be said to dry up, I have found the most suitable dressing, as it assists in this drying process, to be blotting-paper, which I fold into a thick compress and wet with water, and apply directly to the sore, the pad being large enough to cover all surrounding inflammation; this is secured by the domett bandage before mentioned, the bar-needle being covered with a piece of lint or adhesive plaster, and left between two of the turns of the bandage, which enables the clasp to be taken off the bar, without disturbing the dressings, should it cause pain after ten or twelve hours; and it is perhaps prudent, as a rule, always to attend to this point, as otherwise the wire may cut the skin, and make, while it cures, a wound, though this may be obviated by a pad or plaster under the clasp.

"The blotting-paper dressing and the bar may remain forty, fifty, or sixty hours, when the needle must be taken out, and the ulcer dressed again as before described, taking care not to remove any portion of the paper which may adhere to the ulcer, as this forms an artificial scab, which favours the healing process.

"If the case be a varix or varicose eruption only, all that will be necessary will be to apply the wet pad of blotting-paper over the site of the needle, and afterwards roll the limb with the domett bandage, which also may be put on wet with warm water, if pain or inflammation be present; and the eruption itself may be painted with the calamine and zinc lotion of the Hospital Pharmacopœia.

"Any subsequent uneasiness in the limb or parts affected may be moderated by passing a compress wet with tepid water around the bandage, and in very irritable patients the clasp may be required to be removed after a few hours. But the detail of the following cases, selected out of many for their supposed fitness for the bar-needle, will exemplify these points, and as they are reported in the rotation they have occurred, judgment upon the merits of the operation will be unbiassed; my own experience of this matter leading me to believe that, as far as we have yet gone, the treatment of varicose ulcer, pure and simple, is reduced from weeks into days by this operation.

"Case.—H. S—, æt. 49, of Walworth, mother of five children, has suffered from varicose veins for twenty years, but never had an ulcer until two years ago, when a vein 'bursted;' a sore was the consequence. She applied to the Skin Hospital as an out-patient a short time afterwards with an oval ulcer the size of a pap-spoon in the course of the internal saphena vein, two

and a half inches above the internal maleolus. The wound healed by the usual hospital treatment in about two months, and remained well for nearly a year, when it 'broke out again' in the same situation, and extended to about the same size, and has since remained open and very painful, although she has attended the hospital as out-patient for nearly four months. She has been constitutionally treated to relieve the inflammatory action in the vein, and the wound has been dressed with the unguentum rubrum of the Hospital Pharmacopœia, and the domett bandage has been constantly worn, applied by the patient herself.

"This case being free from complications, if we except the age, 49, and consequent constitutional change in the patient, was deemed, from previous experience with the tubular needle and wire ligature, suitable for the operation of the bar-needle, which was accordingly performed in the manner described, about one inch and a half above the ulcer, the point of the needle entering about half an inch to the right of the sore, and making its exit half an inch to the left, so as to interpose a bar or support between the column of blood in the varicose vein, and deeper plexus of veins, and the ulcer. No clasp was used in this case, but the projecting ends of the bar were covered with a piece of adhesive plaster, doubled over them, so as to keep them from being disturbed. The dressing of the wound was simply a pad of blotting-paper wetted with water, and the domett bandage was lightly but evenly applied from the toes to above the calf of the leg; leaving the needle between two of the circles of the bandage. The patient being directed to ride home from the hospital and rest the limb, but not to remove the bandage; but, in the event of much pain, to fold a piece of linen wet with warm water round the affected part, and regulate the bowels with the magnesian colchicum mixture of the hospital. The bar at once obstructed the circulation, as evidenced by the flaccid state of the veins on either side of it, the blood having found other channels for its returning route. The operation caused very little pain, and, *as in every other case, not a drop of blood was shed;* and so little subsequent inconvenience was experieneed on the patient's arrival at home, that after the first day, when she rested the limb, she went about her usual avocation, that of attending to a small shop, instead of going to bed as desired, until the following Tuesday, April 3d, four days from the operation, when she attended to have the needle removed, the dressings never having been disturbed since they were put on, though she had kept a wet rag round the lower part of the limb. The needle had occasioned very little inflammation, and came away without pain or difficulty. There was a hard and rather tender portion of the vein immediately over it, which might be traced to the extent of half an inch above and half an inch or less below the bar. On removing the blotting-paper, a small portion of its under surface adhered to the ulcer, which was perfectly dried up, and in fact well.

"April 10th.—The patient attended this day at the hospital with the ulcer entirely and firmly healed."

Several other cases are given in which the treatment was attended by an equally satisfactory result.

Art. 86.—*A point in the treatment of Epithelial Cancer.* By M. Sédillot, of Strasburgh.

(*Journal of Pract. Med. and Surgery*, Aug. 1860.)

The rule generally adopted in the treatment of epithelial cancer consists in the entire removal of the tumour and of a portion of the

adjacent textures, in order to obviate their reproduction. In some instances, however, the excision of a considerable extent of the neighbouring parts is, for various reasons, objectionable. On the other hand, surgeons have long been aware of the resistance of fibrous structures to the extension of epithelial cancer. Now surgical art is in possession of ready means of producing an adventitious fibrous tissue of low vascularity, which is more or less refractory to morbid change. Hence, the idea occurred to M. Sédillot, to create an artificial barrier to the progress of epithelial tumours, by the use of the actual cautery. This practitioner relates five cases in which this method seems to have been productive of excellent results; but the operations are yet too recent to allow of the patients being considered altogether safe from the chances of a relapse.

ART. 87.—*On the treatment of Wounds and Patients after operations.* By Dr. HUMPHRY, Surgeon to Addenbrooke's Hospital, Cambridge.

(*British Med. Journal*, Oct. 27, 1860.)

Out of this paper, which contains an account of the very sensible practice followed in Addenbrooke's Hospital, we select, as at once new and important, the remarks following, upon the desirableness of leaving the wound uncovered, and of applying adhesive plaster wet.

"*Leaving the wound uncovered.*—It is well known that wounds of the face commonly heal up, in their whole length, by first intention. This is due, in great measure, to the vital qualities of the parts; and in some degree also, I apprehend, to the fact that they are usually left exposed to the air, their edges being held in contact merely by sutures. For some years we have adopted this plan after amputations and all, or nearly all, other operations. The integuments are united by sutures placed at intervals of about an inch; and the wound, as well as the adjacent surface, is left quite exposed to the air; no plaster, bandage, or dressing of any kind, being placed upon it. The advantages of this mode of treatment are very great. All the irritation, the galling pressure, the retention of heat, and other inconveniences resulting from bandages and plasters, are thus avoided. The edge of the wound and the surrounding skin being uncovered, the eye can take cognisance of what is going on; and we can cut a stitch here and there, when required, can keep the part clean, or take other measures without difficulty. Forasmuch as no dressings are applied, there are none to be removed. The suffering which used to be caused by the dressing of wounds after operations is got rid of. In many cases, I do not touch the wound, except for the purpose of removing the sutures, from the day of the operation; and several patients, who have undergone amputation under chloroform, have told me that, neither during the operation nor subsequently, did they experience any pain whatever. We decidedly have more frequent union by first intention than when we were in the habit of applying dressings to the wound. This not unfrequently takes place throughout the entire wound, except in the one or two narrow tracks where the ligatures pass, after amputation, and even sometimes after excision of joints.

"Contrast this simple treatment and its results with the barbarous

proceedings in the olden time, so vividly depicted by John Bell, when every wound was plugged to the bottom, and stretched wide open with dressings and acrid balsams, with tents and leaden syphons, when the patients were victims to murderous theories respecting the "digestion," the "mundification," the "incarnation," and the "cicatrisation" of wounds. Had such theories and such practices still prevailed, chloroform, by lessening the pain and dread, and increasing the number of operations, would have been a curse instead of a blessing. Happy is it that the discovery of the means of preventing pain during operations has taken place when so little pain is caused by dressings after operations.

"We close the wound at the time of the operation, while the patient is still under the influence of chloroform. At one time, we tried the plan of leaving the wound open for some hours after the operation; but we did not find any especial advantage in it, certainly not enough to compensate the patient for the suffering and disappointment caused by our reappearing to close and stitch up the wound after he was in bed, when he was just beginning to recover from the effects of the operation, and to congratulate himself that he had escaped from our torturings.

"If suppuration takes place, an early and free vent should be afforded to the pus, by cutting the stitches and opening the wound; and care should be taken to keep the wound clean. In this, a syringe is a very useful adjunct, which might be more frequently employed by English surgeons than it is. In Berlin, a syringe is always carried by the surgeon in his visits round the hospital, and is used by him to cleanse almost every wound and sore.

"Water dressing or poultices are sometimes required; and their influence, at times soothing, at others slightly stimulating, is often very beneficial. Commonly, I think, they are used too indiscriminately, and continued too long. They have a tendency to relax the parts, and appear to me to predispose, in some measure, to erysipelas. The quantity of poultice which is used in some hospitals is certainly remarkable, and might, I think, with great advantage, be diminished.

"Large open wounds—that is where portions of the skin have been removed, so that the edges cannot be approximated—are, in our hospital, not unfrequently, left exposed to the air, without any covering. A dry crust or scab forms upon them, beneath which cicatrisation goes on; and we find that the healing often proceeds more quickly in this way than when the part is kept moist and the products of the wound are continually flowing away into the poultices or dressings.

"*Adhesive plaster applied wet.*—When it is desirable to use adhesive plaster, you will find it an excellent plan to steep the piece of plaster in hot water before applying it, and to put it upon the part while it is moist. In this state, it can be adapted to the surface more accurately than when it is heated by the fire and applied in the usual manner, and it is decidedly less irritating. It soon dries, and, when dry, adheres well. This method is very convenient in the case of slight wounds of the hand; for, when the plaster has become dry, it forms a very effective protection. It often remains on for days, in spite of repeated washing of the hands. We find the wetted plaster of great service in the treatment of sore legs, swelled joints, and other cases where pressure is

required, as well as in the management of wounds. Indeed, in almost all the instances in which I use adhesive plaster, I steep it in hot water, instead of heating it by the fire."

ART. 88.—*On certain points connected with the dressing of Stumps after Amputation.* By Mr. SYMONDS, Surgeon to the Radcliffe Infirmary, Oxford.

(*Medical Times and Gazette*, Sept. 8, 1860.)

Mr. Symonds has abandoned the old silk suture, in favour of the metallic suture. He also prefers the needle or twisted suture to the common wire. Referring to this point, he says:

"With a view to test their relative value, repeated experiments were made by myself and Mr. Gray, our house-surgeon. In different patients, with different descriptions of wounds, the twisted suture was used side by side with the wire suture, and the result in almost every case was this—that, at the end of a given time, union was more advanced and more satisfactory at the points where the twisted suture was employed, than at the other points. These experiments appear to me to carry some weight; for, when two kinds of suture, inserted simultaneously, are left side by side in the same wound for an equal length of time, there can be little room for fallacy in one's estimate of their relative efficiency.

"The superiority of the needle to the wire is probably due to its greater firmness, enabling it to hold the edges of a wound in more exact apposition. The superiority of wire to thread, on the other hand, must be attributed to its inertness from non-absorption of surrounding fluids.

"An objection sometimes urged against the twisted suture is this—that often (in consequence of blood and lymph drying around the points of entrance and exit) its removal requires an amount of force which causes pain to the patient, as well as injury to the newly formed adhesions. This evil may be prevented by a very simple precaution—well oiling the thread before it is twisted over the needle, and oiling it again (with a camel's-hair brush) once a day as long as the needle remains in. The needle may then be removed without any pain, or any injurious traction on the tissues recently united.

"A very excellent kind of needle for the twisted suture is the common lance-pointed hare-lip needle, made by Weiss. It does not oxidize; it cuts easily, and is easily cut. I have suggested to Messrs. Weiss, as a matter of economy, to have them made at least double their present length, since about a quarter of each one (the flattened extremity) has to be wasted."

No bandage or compress is used from first to last. The mode of dressing was as follows:—The wound having been secured with twisted sutures, a single layer of wet lint was placed loosely over the end of the stump, and kept constantly wetted for about a week; no other covering was applied. Then, as each suture was removed, a narrow strip of adhesive plaster was put to support the parts it had held in appo-

sition, and changed as seldom as possible. No bandage or compress was used from first to last.

When it is desirable to support the edges of the wound with adhesive plaster, whatever may be the width of the strips towards their ends, Mr. Symonds has found it better not to cut them more than half an inch broad at the part which is to be in contact with the wound. The advantages are—1, that the condition of the wound in the intervals between the strips is thereby constantly open to inspection; 2, there is the smallest possible area of contact between wound and plaster—a great advantage when the former happens to be irritable; 3, free vent is left for discharge.

"The position of the strips of plaster should be changed occasionally, otherwise the intervening parts from the unequal distribution of pressure, having a tendency to become unduly prominent. Attention to this will secure an evenly rounded contour to the stump; neglect of it will do the reverse, however well the stump may have been cut. This leads me, lastly, to notice how much it is in the power of the dresser to mould a stump, by making constant, steady pressure (whether by plaster or other means) on any point. If in any case, to use Mr. Paget's terse language, unremitting pressure will cause unrepaired absorption, more especially has it a tendency to do this in a part where new tissue is in process of formation."

ART. 89.—*On the progress of Vascular and Nervous Reproduction in portions of Engrafted Skin.* By M. JOBERT DE LAMBALLE.

(*Lancet*, Sept. 8, 1860.)

In this paper (which was read at a recent meeting of the Academy of Medicine at Paris), the progress of vascular and nervous reproduction, as observed during the cicatrization of engrafted skin, is accurately studied. The operation serving as text for this essay was undertaken for the purpose of remedying a deformity resulting from the removal of a secondary cancer. The region occupied by the unsightly cicatrix was the right eyebrow, the inner angle of the eye, and ala of the nose on the same side. In providing a flap destined to cover this unbecoming scar, the surgeon dissected off from the forehead a somewhat pear-shaped patch of skin (the exact size requisite having previously been ascertained by measurement), with the exception of a narrow slip, or pedicle, reserved for the conveyance of vascular supply to the flap; the whole was completely detached from the surrounding integument, and turned down upon the scar (itself also deprived of its imperfect superstratum of cutis), and there secured by the interrupted suture. The engrafted slip of tissue—much in the position of a man who has purchased a practice in a new neighbourhood, with a limited introduction—to use a horticultural phrase, took kindly to its new soil, and by the eighth day the sutures were dispensed with. The temperature of the transplanted skin remained low, however, and its texture flabby and inelastic; a slight prick with a pin on its surface was not followed by bleeding, and pressure or tickling was referred *to the pedicle* alone. That some vascular supply did, however, reach its vessels was incontestable, for the part presented no appear-

ance of gangrene. Day after day the same experiments were repeated; at length a little blood followed the slight puncture, and a slight sensation was perceptible in the part pricked. These signs of returning vitality steadily augmented, and by the end of the third month after the operation, the graft was deemed to possess sufficient independent vigour to shift for itself; and the little isthmus being declared unnecessary, the flap was isolated, and its cut extremity turned down towards the inner angle of the eye, where the scar hitherto had purposely been left uncovered. The deformity was thus completely remedied, and the cure most successful. M. Jobert, in his remarks upon the way in which the vascular and nervous relations are established between tissues thus artificially brought into contact, draws especial attention to the consecutive advance of the two functions, the one in the wake of the other; the new circulation entailing the new innervation, and the perfect development of the former being immediately followed up by a similar progress in the latter. The author also expresses it as his opinion, that the mode in which the correct sensibility of the engrafted tissue is restored after transplantation by means of its communications with the part into which it is deposited, is a proof of the unity and identity of the sensitive function all over the body.

(c) CONCERNING FRACTURES AND DISLOCATIONS.

ART. 90.—*Remarks on the use of the "Plaster of Paris" or "Gypsum" Bandage, in the treatment of Fractures, Dislocations, &c.* By Dr. CHRISTOPHER FLEMING, Surgeon to the Richmond Hospital.

(*Dublin Hospital Gazette*, Sept. 19, 1860.)

Being aware of the interest which Dr. Gurlt, of Berlin, has taken in the subject of fractures, and of his advocacy of the use of the "Plaster of Paris Bandage" in their treatment, Dr. Fleming availed himself of the opportunity of ascertaining from him the exact mode of its application and of testing its value during his recent visit to Dublin. The cases under treatment in hospital, which immediately presented themselves, were—one of fracture of the lower end of the fibula in its ordinary locality, and accompanied with some ecchymosis and surrounding effusion—one of neglected dislocation at the elbow-joint of old standing, where fixity, on its reduction to a useful position, was desirable, and a double fracture of the tibia in its lower third, by direct violence from a railway accident, where some swelling and contusion were present. As far as Dr. Fleming can form an opinion from a comparatively limited experience, he is disposed to view this as a useful surgical appliance, and he feels satisfied it will be found beneficial in many instances, where compression and fixity of position are desirable objects to attain. It is easy of application, it hardens rapidly, it forms by itself a very firm and solid framework, it gives a uniform and comfortable support, and it thus possesses advantages superior to the starch or dextrine bandage. Caution must unquestionably be observed as regards the proper selection of cases in which such mode of practice may be suitable, and attention must be paid to those curative stages in which it may be applicable.

The particulars of adjustment of this bandage are very similar to those

adopted in the starch and dextrine, with the exception of some collateral addition to the rollers and plaster. The plaster should be freshly burnt, and should be reduced to a fine dry powder, and the calico for it should not be glazed, and should be rather coarse and open in fabric. The under roller may be of light flannel, of calico, or of French wadding: the author has used the light flannel, in preference. The plaster bandage should be firmly rubbed on both surfaces with the powder until its meshes are completely filled with it, when being gradually and loosely rolled up, one end of the roller is dipped in water to a depth nearly on a level with the other, and the whole, by a little manipulation, is moistened in a few seconds, and is ready for immediate use. However wetted, care should be taken not to allow the plaster powder to be washed off. In rolling the bandage around the limb, the several circular turns should be folded close to each other, and their edges smoothed down with or without additional moisture or plaster as may appear requisite. In other instances, as in the case of fractured tibia, some thin fluid plaster was at hand, which was pasted on each side of the limb, and so gave great solidity to the whole. It is unnecessary to specify the care demanded in the proper position of the limb, and in the proper adjustment of the seat of fracture, whilst this apparatus is being fixed. It dries very quickly; indeed, within a few minutes it is sufficiently firm for steadiness without support, and in twenty minutes or so it is nearly hardened.

In the cases alluded to, no uncomfortable heat or tension was experienced, and no pain was complained of. In the first case the plaster bandage was removed at the end of three weeks, and nothing could be more satisfactory than the condition of the limb. In the second, it formed an excellent angular casing; and in the third, very favorable progress is being made. The protected condition of the integuments by the under bandage will prevent any injury in the removal of the plaster bandage, and Dr. Fleming understands from Dr. Gurlt that by damping the apparatus no difficulty will arise, no matter what the hardness may be, and that it can be easily unrolled, when wetted. There are other details which do not require any particular notice, as they will necessarily attract the attention of the practical surgeon.

(D) CONCERNING INJURIES AND DISEASES OF VESSELS.

ART. 91.—*On the treatment of Varicose Veins by the Button Suture.* Dr. N. BOZEMAN, of New Orleans.

(*Pamphlet*, New Orleans, 1860.)

The treatment of varicose veins recommended in this pamphlet is that which Dr. Bozeman has so successfully applied to the treatment of vesico-vaginal fistula—the silver wire and the button suture; and the four cases given sufficiently show that this recommendation is well deserving of attention. Of these cases, which are four in number (three of varicose veins of the leg, one of varicocele), we take two as illustrations.

CASE.—Elias Smith, plasterer, æt. 19, of medium stature, and rather sparely built, was sent to me in February last, by my friend, Dr. J. C. Batchelor, of

this city, to have his leg examined, with a view to an operation. He stated that, ever since he could recollect, there had been an enlarged condition of the vein on the inside of his right leg, and of late it seemed to be increasing in size. He said that it gave him no pain now, or inconvenience, but he feared it would, and ultimately might force him to give up his trade.

Upon examination, I found that it was the saphena interna which was involved, the dilatation extending from the ankle nearly to its passage through the fascia lata. At a point just below the knee the dilatation was greatest, and here the vein was also very tortuous.

The two preceding cases were operated upon in the recumbent position. This patient I placed in the erect—and I now greatly prefer this position, for the reason that the vein is distended, and the needle can be entered and carried around it with more facility. I introduced five ligatures, two below, one opposite, and two above the knee. This was easily and quickly done. The patient was now made to lie down, in order that the vein might be emptied of as much blood as possible before adjusting the ligatures. The lowest one was arranged first, and the others, then, in regular succession. The disc of lead and shot were next slid down and secured, as in the preceding case.

After-treatment the same as heretofore pointed out. The patient had no fever. On the seventh day I removed two of the sutures, and on the ninth the remainder. On the fourteenth day after the operation the patient went to work, experiencing no inconvenience from it whatever.

I examined this case a few days ago, it being nearly three months after the operation, and I was astonished to find that the obliterated vein had so nearly disappeared. It could be seen only at one point, just below the knee, and here it felt perfectly hard, and was quite moveable beneath the skin. The consolidation had extended entirely up to the saphenous opening. The result could not have been more satisfactory.

Case.—A gentleman of Donaldsonville, in this State, æt. about 30, consulted me in reference to the disease in question, which he said he had had since he was fourteen years old. An examination proved his statement, as to the existence of the disease, to be correct. It was, as is almost always the case, on the left side. Associated with it was an enormous elongation of the scrotum. It hung down, especially on the left side, nearly to the middle of the thigh. An operation, therefore, not only for the varicocele, but for retrenchment of the scrotum, was called for, which I performed in the order mentioned. That for the varicocele was performed upon the button-suture principle, the ligature being introduced in the same manner recommended by Professor Gross, in the use of the silk *cord*. In this way the veins were completely encircled, and both ends of the wire left hanging out at the same opening in the skin. The ligature was next adjusted, and the button and shot secured as in the second and third cases of varices. The patient was now put to bed, and the scrotum raised up and supported with a suspensory bandage. Cold-water dressings ordered. There was the usual amount of swelling below the seat of constriction, and on the fifth or sixth day considerable pain. On the seventh day the suture apparatus was removed, when consolidation of the veins appeared to be complete. After a few days the patient was allowed to get up. The next thing was to retrench the scrotum, which, after the patient began to walk about, was as long as ever. This operation was performed in the usual way, only a couple of small arteries requiring to be tied. The edges of the wound were brought together by a number of interrupted silver sutures. The patient was then put to bed, and the parts supported by means of a suspensory bandage. Cold-water dressings directed.

A day or two afterwards, hæmorrhage took place from a small artery, and

before it could be controlled the patient lost a considerable amount of blood. Excepting this, he got along remarkably well. On the seventh day I removed the sutures, when union of the parts appeared complete, excepting at one point, where the edges of the wound had not been closely approximated. This filled up in a few days, however, by the granulating process, and the patient was then discharged cured.

I examined this case a few weeks ago, it being about eight months after the operation, and the condition of the parts could not have been more favorable. The veins all appeared to be completely occluded, and reduced to mere threads. Our patient expressed himself entirely relieved of his former troubles.

ART. 92.—*On the treatment of Varicose Veins by the injection of persulphate of iron.* By Dr. JAMES M. MINOR, Surgeon to the Brooklyn City Hospital.

(*American Med. Times*, July 7, 1860.)

In addition to the cases following, Dr. Minor relates a case of popliteal aneurism treated successfully in the same manner. The persulphate of iron, so far as heretofore used, seems to Dr. Minor to excite adhesive inflammation, and to have no tendency to give rise to pyæmia.

CASE 1.—*Varicose veins of leg—injection of persulphate of iron—cured.*—John T—, admitted March 1st, 1859 (Dr. Enos on duty), with ulcer from varicose vein on leg, of five years' duration; it has healed repeatedly, but again re-opened. Ordered poultice, and rest in recumbent posture.

April 25th.—Ulcers nearly healed. Injected liquor ferri persulphat., gtt. x.*

May 2d.—Veins obliterated at point of injection; neighbouring branches still varicose.

20th.—Ulcers entirely healed, and patient permitted to go out on a pass. Returned drunk, with abrasion of newly cicatrized surface.

June 13th.—Discharged cured.

CASE 2.—*Varicose veins of scrotum—injection of persulphate of iron—cured.*—J. T—, æt. 22, American, admitted under Dr. Minor, Oct. 24th, 1859, with varicose condition of scrotal veins of left side. Has enjoyed very good general health. For six months past has suffered much pain from distended veins of scrotum, extending through spermatic cord to inguinal canal of that side, and also in the testicle; can obtain no relief except in recumbent posture. Ordered cathartic. Suffers with languor and debility from involuntary seminal emissions, after which the pain is much aggravated.

Oct. 28th.—Injected four drops of a solution of persulphate of iron (four parts of water to one of persulphate), with Pravat's syringe, as modified by Tiemann. Patient was made to stand erect, in order to fill the veins, and make them more distinct and prominent—a necessary precaution in such loose tissues as are found in that region. He fainted, but was soon restored by placing him in a recumbent posture. The operation scarcely caused any pain, either at the time or subsequently. A firm coagulum was formed in thirty seconds. Ordered cloths dipped in water to the part, and recumbent posture.

Nov. 3d.—The clot formed by persulph. ferri gives indications of coming away by ulceration. Has felt less pain in cord since operation; nor does he feel any pain at the point of puncture.

* Officinal solution contains 43 per cent. of the solid persulphate.

Feb. 6th.—Clot came away last night, leaving a healthy granulating surface.

26th.—Discharged cured.

Case 3.—*Varicose veins of scrotum—second injection—cured.*—James T— was admitted a short time after his discharge in November last, with varicose condition of other deep scrotal veins near the cord. The vermiform mass of enlarged veins around the point of former operation are entirely obliterated. Has been variously treated since second admission, but without resort to operative measures.

Feb. 14th.—Veins increasing in size, attended with pain. Injected three drops of a solution of persulphate of iron in the proportion of one part persulphate to two of distilled water, followed by immediate coagulation of blood, as on former occasion, and with as little pain.

15th.—Injection seems to have entirely relieved the pain in the cord, and he expresses himself as feeling better in every particular.

19th.—Continues comfortable. Some pain and heat at point of puncture, where there is an exceedingly hard and prominent tumour. Tumour is close to the cord, and seems in some measure to involve it. Seminal emissions occur at long intervals now. Cold water dressings.

26th.—Clot decreasing in size, but still very hard. No appearance of ulcerating, as on former use of the persulphate.

March 1st.—Tumour has steadily decreased in size; but little hardness remains. Veins completely obliterated when injected, as well as all others which were enlarged.

Case 4.—*Varicose veins of leg—injection of persulphate of iron—cured.*—Carl de B—, admitted Dec. 22d, 1859, with paronychia of left thumb. Varicose veins in left leg, which he has had for many years. Veins very much distended at one point. Owing to the size of the veins, it was thought necessary to insert a larger quantity of the solution than usual.

Feb. 11th.—Ten drops of a solution of the strength of one part persulphate to three of water was used.

12th.—A clot has formed, and obstructed the vein; though it does not appear to be so firm as in previous cases.

14th.—Complains of pain at point of puncture, where there is a considerable swelling and redness. Apply cold lotion.

16th.—Inflammation and pain subsiding. Continue lotion. No constitutional disturbance at any time.

22d.—Tumour lessening in size, and redness disappearing.

March 10th.—All inflammatory symptoms have subsided, and the vein is obliterated at point of operation.

Case 5.—*Varicose veins of leg—injection of persulphate of iron—cured.*—James F— was admitted December 29th, 1859, with secondary syphilis, and ulcers on right leg: has varicose veins of the same leg, which are increasing in size, and he expresses a wish to be operated on for their relief.

Feb. 11th.—Injected, as usual, three drops of a solution of the persulphate of iron, one part to four of water. A second puncture was made below the first.

13th.—Coagulum formed, but not so marked as in other cases. No inflammation about punctures.

19th.—Ulcer on leg has improved rapidly since operation.

25th.—Vein obliterated between points of operation.

27th.—Old ulcer cicatrized, and he desires to leave the hospital. Discharged cured.

"It may be desirable," says Dr. Minor, "to state, briefly, the mode of

procedure in the injection of varicose veins. A Pravat's syringe as modified by Mr. Tiemann is the instrument used. This is a very small syringe of vulcanized rubber, having a small (almost capillary) canula screwed to its lower end. This canula is cut obliquely at its extremity somewhat after the manner of a pen, ending in a sharp point. The piston rod is graduated to drops, to admit of the use of any quantity, however small.

"The canula being screwed on, the quantity of the solution desired to be used is drawn in through the canula, which is then plunged into the vein, the patient standing erect. The finger of an assistant is then placed upon the vein, a little above and below the point of puncture, and firm pressure made; the piston is then forced down and the fluid injected. It is important that the pressure on the cardiac side of the puncture should be sufficient to completely stop the upward current, as otherwise portions of the clot might be carried into the circulation. The pressure need be kept up for a minute or two only.

"This completes the operation. The patient is placed in the recumbent posture, and cold water dressings applied, with directions not to rise for some days. The above mode of treatment of varicose veins would seem to promise a safe, prompt, and painless cure of a most uncomfortable, painful, and sometimes perilous complaint, for which, heretofore, there have been only uncertain and dangerous expedients."

(E) CONCERNING ANÆSTHETICS.

ART. 93.—*Results of some researches on Hypnotism by Drs. Démarquay and Giraud-Teulon.* By Dr. WILLIAM MOSS, of Philadelphia.

(*Charlestown Med. Rev.*, Sept., 1860.)

Almost twenty years ago, Dr. Braid, of Manchester, demonstrated the identity of the state which he named hypnotism with that popularly termed magnetism, mesmerism, or electro-biology; he showed also that the state was a purely subjective one, producible at the will of the subject and totally independent of any influence from the operator. The subject has since slumbered for many years, until lately, when MM. Broca and Azam, endorsed by no less an authority than M. Velpeau, produced evidence of the successful employment of hypnotism as an anæsthetic, as powerful and less dangerous than chloroform and ether.

These revelations created a furore among the excitable Parisians, professional and laic, of which the intensity was only equalled by the suddenness of its abatement, yet among the ruins of this *soi-disant* discovery, there remains much to interest both the therapeutist and physiologist. The investigations described in the *brochure* of MM. Démarquay and Teulon were made upon the patients of the Maison Municipale de Santé, of Paris, and were evidently conducted in a spirit of impartial inquiry, equally influenced by the tide-like flood and ebb of hope and disappointment, which seems to be the inevitable accompaniment of every new discovery. The apparatus used by MM. Démarquay and Teulon consisted of a ball of polished steel, half an inch in diameter, attached by a stem four to six inches in length to a circlet surrounding the head of the patient, so that the gaze when fixed on the ball should be upward and slightly convergent.

Résumé of observations.—Obs. I. *a.* Female, æt. 40. Pale, anæmic, under treatment for old ulcerated cancer of uterus. After six or seven minutes, fell into a cataleptic state, without loss of consciousness or sensibility. Superior and inferior members, notably the former, remain in horizontal position when raised by the experimenter.

b. Next day, after ten minutes, slight nervous movements of a hysterical nature; muscular energy neither augmented nor diminished.

c. Four days afterwards, after four minutes, cataleptic state; superior extremities only, rigid; fatigue and confusion upon waking.

Obs. II. Female, æt. 45. Operated upon four days before for strangulated hernia. A few slight hysterical symptoms only produced.

Obs. III. Female, æt. 50. Uterine cancer. Slight symptoms of cerebral congestion; flushed face; fatigue on waking. Two other observations on this patient with no result.

Obs. IV. *a.* Young female, nervous, timid; operation eight days before for anal fistula. After six or eight minutes, incipient symptoms of an attack of hysteria, with slight diminution of consciousness and exaggeration of sensibility.

b. Next day, no result.

c. Two days later, well-marked hysteric attack, causing a removal of apparatus, hyperæsthesia; intelligence and motility intact.

Obs. V. *a.* Female, æt. 30. Metritis, very anæmic. After three or four minutes, deep inspirations, pulse agitated, face anxious and flushed, head hot, carphology, slight contortions of limbs, pupils slightly dilated; consciousness diminished, but not lost; sensibility but little diminished. The patient complained, when pinched. This patient, in common with all the others, complained at the commencement of the experiment, of oppression and dryness of the fauces. Upper part of the body covered with sweat, lower cold; complete muscular resolution; arms falling, when raised, as if lifeless; although conscious, unable to move even a finger.

b. Next day, result nearly nil.

c. Three days later, result nearly the same as on the first day. In this experiment, sensibility most diminished just after waking.

Obs. VI. Female, æt. 20. Contusion of pelvis. Had had chloroform administered several times to relieve pain. Submitted three times to the experiment; once pelvic pain relieved, once brought on. Results almost nil.

Obs. VII. Female. No result.

Obs. VIII. Female, æt. 40. Slight uterine lesion. After three or four minutes, complete hypnotism; muscular resolution perfect; insensibility to pinching; intelligence preserved.

Obs. IX and X. Healthy females, æt. 40 and 9. Results nil.

Obs. XI. Female, æt. 45. Circanoma uteri. Slight fatigue, vertigo, voluptuous sensations.

Obs. XII and XIII. Healthy woman and child. No result.

Obs. XIV. Young female. Recent operation for perineorraphy. A few slight nervous symptoms, followed by a profound ordinary sleep, without either catalepsy or resolution; instantaneously awakened by a light prick with a pin.

Obs. XV. Young girl. After ten minutes, profound sleep, with perfect insensibility to pinching or pricking. Muscular resolution resembling more that of natural sleep than of obs. V and VIII.

Obs. XVI, XVII, and XVIII. Males. No results.

In all, forty experiments upon eighteen subjects. Of these the majority were either without any result, or the effect produced was merely that of cerebral congestion. In obs. IV a frank attack of hysteria was induced; in

obs. XIV a true physiological sleep; while in only four cases, obs. I, V, VIII, and XV, was the hypnotic state induced. In obs. I there was a cataleptic state, without loss of sensibility; in obs. V muscular resolution, with sensibility diminished; in obs. VIII resolution and insensibility; and in obs. XV resolution, loss of sensibility and of consciousness. Thus, out of eighteen cases, but one or, perhaps, two, could have lent themselves to surgical action. Taking also into consideration the risk of inducing cataleptic or hysteric attacks in weak or diseased females, the conclusion is adverse to the efficacy of hypnotism as an anæsthetic. As some compensation for this disappointment, many of the patients who were suffering from severe uterine pains were relieved from them both during and for many hours after the application of hypnotism; and one case has been reported, in which a violent asthmatic attack was overcome by its use.

The resemblance or, rather, the identity of the manifestations of the hypnotic with those of the magnetic state was confirmed by the analysis of their physical and mental phenomena. In both states the general sensibility was more or less blunted, as were taste and smell; vision was in abeyance; the lips and nostrils insensible to irritating applications; while audition was almost supernaturally acute. This last fact explains, perhaps, many of the wonderful performances of magnetic "mediums." The hypnotised patients experienced generally an intense "bien-être" and conversed freely, preferring subjects in which their affections were interested. The experimenter exercises neither fascination nor mental control over the subject, nor does his presence or absence induce or end the hypnotic sleep.

A fresh series of experiments was undertaken upon the same subjects, without the shining ball or the strabismic convergency, the patient's gaze being merely fixed upon a point on the ceiling, in an upward and slightly convergent direction. The results were the same as in the first series.

These experiments were instituted to compare the hypnotic phenomena with those of somnambulism. Their resemblance was so close that the citation of a case or two will be interesting.

Obs. XXI. The subject of obs. XV. Fell asleep as before. After answering a few questions, rose at the request of her experimenter, took his arm and walked with a firm step towards the door, but, without seeing a chair purposely placed in her path and against which she struck, drew back without any expression of pain, and continued her walk. Finding her very pale and bathed in a cold sweat, she was awakened, when she seemed rather astonished and complained of fatigue, but was unconscious of all that had happened. She had retained her tactile sensibility, although insensible to pain.

Obs. XXII. Subject of obs. XIV. This subject had just received a letter from her absent husband announcing his approaching return. In her sleep she imagined that she saw him, and in answer to questions, she unhesitatingly described the appearance of the car in which he was, the number, age, sex, &c., of his companions, and named the hour at which he would arrive. It is needless to say that these particulars, despite their probability, were all incorrect. When asked to go to meet her husband, she advanced towards the door, but was waked by the draught when it was opened. She also was unconscious of all that had passed. Another lady, while in the hypnotic state, commenced making disclosures of so terribly compromising a nature for herself that the operator was forced to abruptly terminate the experiment. These cases differ, certainly, from ordinary sleep-walking only in their want of spontaneousness.

Not less curious was the comparison between the hypnotic and physio-

logical sleeps. In each we have, at the commencement, retarded respiration, deep inspirations, and increased cutaneous action; in each, sleep invades, successfully, vision, muscular, general, and special sensibility, and intelligence, and in each the special senses yield in the same order, viz., vision, taste, and smell, touch, audition. The only points of difference observed were that the tactile and muscular sensibility, in the hypnotic state, were sometimes unduly excited or depressed.

The conclusions at which MM. Démarquay and Giraud-Teulon have arrived, are—

I. That hypnotism can seldom or never be used as an anæsthetic.

II. That it may relieve certain neuralgias, or nervous attacks.

III. That the really valuable properties of hypnotism have hitherto been neglected or unobserved, viz.—

1. The resemblance between many of its manifestations and those of some of the physiological processes.

2. The successive isolation, or dissecting away, in this state, of the different senses, and—

3. The potent auxiliaries we have acquired in these properties for further researches in the workings of the mental faculties.

(F) CONCERNING OPERATIONS.

ART. 94.—*Reports in Operative Surgery.*
By Mr. R. G. H. BUTCHER, Surgeon to Mercer's Hospital, Dublin, &c.
(*Pamphlet*, 8vo, Third and Fourth Series, Dublin, MacGlashan and Gill, 1860.)

These pamphlets are reprints from the 'Dublin Quarterly Journal of the Medical Sciences.' The subjects treated of are excision of the carpus, excision of the knee-joint, excision of the elbow, excision of the lower jaw, Syme and Pirogoff's operation at the ankle-joint, excision of the metatarso-phalangeal articulation of the great toe, excision of the upper jaw, and the operative measures necessary in complicated hare-lip. It is of his own actual experience under these several heads that the author speaks, and what he says is well deserving the attention of the practical surgeon.

II. SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 95.—*Clinical Surgery: the Injuries and Diseases of the Nervous System.* By Mr. BRYANT, Assistant Surgeon to Guy's Hospital, &c.

(8vo, Churchill, Part 1, pp. 75, 1860.)

The illustration of disease, and of the results of injuries, by the quotation of cases, is Mr. Bryant's object in the present publication, and this object is very successfully realised. The present part includes the injuries to the skull and spine, with their contents, briefly noticing also some of the diseases. The cases quoted have all been under personal observation, and have taken place within the last five years in the practice of the author, and in that of his colleagues.

The inferences to be drawn from thirty-nine cases, illustrating concussion and injuries to the brain, including compression and extravasation of blood, associated or not with fracture of the skull, appear to be these:

1. That injuries to the skull are of importance only in as far as they involve the cranial contents; that the local mischief is of small importance compared with the intracranial; and that uncomplicated fracture of the cranium is seldom followed by any injurious symptoms compared with any general injury to the cerebral structure.

2. That a *slight* concussion of the brain, whether associated with a fracture of the vault or base of the skull or not, will generally do well, and will be known by only a slight or temporary suspension of the cerebral functions, independent of the symptoms of local injury.

3. That a *severe* concussion of the brain, whether associated or not with fracture of the vault or base of the skull, is liable to produce primarily contusion or laceration of the brain-structure, either upon its surface or within its ventricles; that extravasation of blood may also take place, either upon the brain or within its structure; and that, consequently, if the *primary* effects of the accident do not cause a fatal termination, a *secondary* encephalic inflammation probably will.

4. That *contre-coup*, the result of a severe shaking or concussion of the brain, produces severe contusion and laceration of the brain, and with such, extravasation of blood; but that *contre-coup* never yet produced fracture of the skull, and it is doubtful whether it ever produced a rupture of the middle meningeal artery, and, as a consequence, extravasation of blood upon the dura mater and compression of the brain.

5. That *a fall upon the vertex from a height, or a blow upon the head from a blunt instrument*, may be followed by fracture of the skull, or otherwise; but such an accident produces, as a rule, a general concussion of the brain, and with this may be associated any of its complications, such as contusion or laceration of the brain, either upon its surface or within the ventricles, and consequently with effusion of blood.

6. That *falls upon a pointed object, and blows with a sharp instrument*, as a rule, are followed by a local fracture; and that if the brain is injured, it is at the seat of injury. As a consequence, the symptoms may be accounted for by local causes only, and the primary treatment to be adopted must be directed by local considerations.

7. That when symptoms of *compression of the brain* immediately follow an injury to the skull produced by a *fall from a height, or blow from a heavy and blunt instrument*, the cerebral injury, as a rule, will be general, and the brain will subsequently be found contused and lacerated, particularly at the base, by *contre-coup;* and that if extravasated blood should be found external to the dura mater, blood will also be found upon the surface of the brain, or within its membranes.

8. That if symptoms of *compression of the brain* follow a *local injury produced by a fall upon a sharp object, or a quick blow from a pointed one*, that such symptoms, as a rule, are produced by *local causes*, such as depressed bone, or extravasation of blood from rupture of the middle meningeal artery.

9. That such *local injuries*, when giving rise to general symptoms, should be treated by elevation of the bone, if depressed; but if no general symptoms are present, unless the bone is comminuted and can be easily removed, no operation is indicated; a local pressure of the brain alone, when uncomplicated with symptoms, generally doing well.

10. That when *compression of the brain* follows as a secondary result of *a local injury* over the course of the meningeal artery, that is, after an interval of time, when reaction has been established, although no depressed bone may be present, it is probably produced by a rupture of one of the arterial branches; the operation of trephining may then be performed with a chance of success, although it is rare to find a very local extravasation, the blood generally passing downwards towards the base, where the operator cannot reach.

11. That when *compression of the brain* follows, as a secondary result, *a general injury*—although that compression is evidently produced by extravasation of blood—the operation of trephining is useless, if not injurious; for although blood may be effused from rupture of a meningeal artery, there will certainly be found some contusion or laceration of the brain itself, or extravasation within its membranes, which the operation cannot relieve, but is sure to increase.

12. That *encephalic inflammation* may follow any concussion or injury to the brain, however slight, whether complicated with fracture or otherwise; and that the danger of such a result is in proportion to the encephalic injury. In cases of contusion or laceration of the brain, with extravasation of blood, it is almost sure to follow, and, as a rule, it will produce a fatal termination. This inflammation may appear within a few hours of the accident, or it may be postponed for some days; it may be very rapid in its course, or very insidious in its nature. If the brain itself is the seat of the disease, it is generally insidious, and either a diffused or local abscess will subsequently be detected; but if the membranes are involved, effusion, coma, and death will rapidly take place.

13. That the *operation of trephining* is perfectly useless in cases of severe concussion of the brain, whether associated or not with fracture,

although it may relieve compression of the brain from local conditions; for the brain is generally injured by *contre-coup* at its base, or in positions where no operation can be of benefit, but must prove injurious.

14. That the *operation of trephining* may prove of value in *local injuries* to the skull or brain, when associated with symptoms of compression and depression of bone, or from the local extravasation of blood. In the former case, when the brain and membranes are uninjured, success may fairly be anticipated; but in the latter, the chances are decidedly against it, as blood, if effused, is seldom local, but passes downwards towards the base.

15. That fractures of the *base of the skull* may take place alone, and be marked by only special symptoms; that they may be associated with, and are generally found in, all severe fractures of the vault, when produced by a heavy fall or blow, the fissures radiating downwards in a direction parallel to the forces employed.

16. That *fractures of the base* may be complicated with encephalic injuries similar to the fractures of the vault, and may consequently be manifested by general symptoms as well as special ones, in severe cases the former completely masking the latter; the injury, however, may generally be diagnosed, the mode of injury indicating the probability of its occurrence.

The inferences from twenty-four instances of fractures and dislocations of the spine are—

1. That injuries to the spinal column are more frequent in the dorsal than in the cervical region, but only in the proportion of fifty-eight to forty-one.

2. That in injuries to the cervical region simple dislocation of the spine is as frequent as the combination of dislocation with fracture. That in all such injuries the intervertebral substance is torn through, the upper vertebra being, as a rule, thrown forwards; and that where fracture takes place it is generally at the spinous process, and not in the bodies.

3. That such dislocation may take place between any of the bodies of the cervical vertebræ; that between the fourth, fifth, and sixth being the most common.

4. That in injuries to the dorsal region pure dislocation is very rare, although it may occur; that such injuries generally take place between the tenth, eleventh, and twelfth vertebræ; that the body of the superior is generally dislocated forwards, and the body of the inferior is as generally fractured; and that some portion of the arch of the inferior vertebra is, as a rule, broken.

5. That a fracture or dislocation of the spine may take place and the cord remain uninjured; that such an escape is quite exceptional, and that, as a rule, the cord is seriously involved.

6. That in at least seventy-five per cent. of all cases of fracture or dislocation of the spine the cord is irreparably injured and disorganized either by the primary mechanical pressure of the dislocated bone, or by the effusion of blood within its structure.

7. That in the remaining twenty-five per cent. the injury may be partially or wholly recovered from, there being no disorganization of

the cord; temporary, perfect, or partial paralysis may be present, and, unless some secondary inflammation take place, a recovery may follow; in these cases it is fair to believe that the cause of the paralysis is merely some extravasation of blood external to the cord.

8. That in injuries to the cervical spine death takes place more rapidly the higher the mischief to the cord exists, and that death generally takes place within forty-eight hours; and that when the injury is lower down, that is, below the seventh vertebra, the patient will not survive more than three days, when the respiration is also carried on through the diaphragm.

9. That in injuries to the cord in the dorsal region, if the patients survive beyond the seventeenth or eighteenth day, they may live for weeks; and that a gradual sinking, and the complication of a bed-sore, is too frequently the immediate cause of death.

ART. 96.—*Case of severe Burn, followed by exfoliation of the whole upper portion of the skull.* By Dr. H. J. PHILPOT, of Simcoe, Canada West.

(*British Amer. Journal*, May, 1860.)

CASE.—Mrs. B—, an Irishwoman, æt. 50, residing within a few miles of our county town, on the 29th of October, 1857, whilst engaged in cooking her breakfast over the open fireplace, was suddenly seized with a fit, and falling forwards on the burning brands, suffered a severe injury of the scalp, face, and neck; portions of the parietal and frontal bones were denuded entirely of flesh, and charred by the flames. Dr. J. M. Salmon, my partner, was in attendance shortly after the accident, and applied linseed oil and lime-water, which had the desired effect of easing the pain, together with the internal use of Tinct. opii, and Spt. Amm. Aromaticus. A severe attack of irritative fever set in consequent upon the great shock to the nervous system, which however yielded to treatment, and no other unfavorable symptoms supervened.

Mrs. B—, residing at a distance, and consequently not able to receive much medical attendance, left the charge of her head to a great extent to the care of nature. With the assistance of a weak stimulating lotion, in the course of a few weeks a large slough was thrown off, which left behind it a healthy granulating surface upon the free margin of the scalp, surrounding the denuded surface of the upper two thirds of the two parietal and the frontal bones. I called to see her occasionally by request, and had a fair opportunity of observing the efforts made by nature to restore to my patient's cranium this severe loss of personal property. One morning I called "*en passant*," and upon entering the house, to my unfeigned astonishment, was greeted by my patient herself with her head bound up, Turk fashion, in a turban of well-greased cloths, and bearing in her hands what I discovered at a glance to be her entire skull-cap. After alternately scrutinising her and the semi-skull she held in her hand, seeing that she still remained alive, after opening her mouth and otherwise exerting herself, I at last found courage to address her. She told me that a week or two previous, on the 15th of August, 1858, just ten months after the accident, whilst applying as usual the lotion upon a piece of rag to the front portion of her head, she felt the bone move, and using a little extra force succeeded in bringing away the whole top of her head. It caused little or no pain, and no bad symptoms

followed. Upon removing the dressing of soft greased cloths I found the entire upper surface of the cerebrum exposed, covered only by its enveloping membranes, and looking like a large fleshy pulsating tumour surrounded by a border formed by the free margin of the lateral portions of the scalp. She seemed to suffer pain every now and then, but otherwise was well and hearty, and busily employed herself knitting. I coaxed her to give me the bone, which at last she consented to do, and I bore it off with me in triumph; it measures across the longitudinal diameter five and three quarter inches, and four and a half inches across the transverse diameter of its concavity.

On the internal surface there are patches left of the *internal* table of the skull, the remaining portion consisting of the exposed diploe. The woman, when last I saw her, was busily occupied in the garden. Her appearance is truly horrible; the much-to-be-dreaded cicatrix, the result of injury done to the neck and breast by the flames, has drawn down the chin to the upper portion of her sternum by innumerable fleshy bands. Ectropion of the upper lid of the right eye, arising from the cicatrization of an ulcer of the integument, exposed to view the eye itself partially destroyed by the devouring element. Of the forehead itself only sufficient is left to show the integument, which before the accident supported the supercilia, now no more to be seen or even traced. It is now nearly two years and a half since the accident happened, and Mrs. B— seems to suffer but little inconvenience from "the house she lives in" being roofless. She is very desirous of getting the skull-cap in her own possession again, as the neighbours tell her her head will never heal up without its being so.

ART. 97.—*Cases of Trephining in syphilitic diseases of the bones of the Skull, with observations.* By HENRY LEE, Surgeon to King's College and the Lock Hospitals.

(*Proceed. of Royal Med. and Chir. Society*, 1860.)

The author gives the particulars of three cases, in all of which the bones of the skull were very extensively diseased. In the first the outer and middle table of the frontal bone, principally on the left side, and part of the left parietal bone, had become necrosed, but the internal table retained its vitality when the trephine was applied. The inner surface of the portion of bone which was removed presented a very uneven surface, from whence numerous small, irregular spicula of bone projected. The dura mater which had been in contact with these was altered in structure, and did not bleed, as the dura mater usually does when a portion of bone is removed by the trephine.

There was here general debility, loss of sensation on the right side of the face, and deafness in both ears. There had been also extensive and long-continued ulceration on the left side of the neck. The removal of the portion of bone, shown in an accompanying drawing, was followed by general restoration of the health, recovery of the sensation of the face (with the exception of a small portion of the right side of the upper lip, which still remains numb), and perfect hearing. This patient has no other treatment excepting a pint of the decoction of sarsaparilla daily.

In the second case there was extensive disease of the outer and middle tables of the skull. The patient became, in consequence, subject to a peculiar kind of fit. This commenced with flushing of the face, followed by twitching of the muscles of that part. The fit would then

sometimes terminate; at others, however, it would be followed by rigidity of the muscles of mastication and of the other muscles of the body. Some of these fits lasted as much as six hours, during which the patient retained his consciousness.

This patient was affected with an ulceration which lasted over a period of between eight and nine years, and which had extended over the skin of the whole right arm, from the shoulder to the wrist.

The application of the trephine in this case was made over the right temporal bone; the portion of the internal table removed was slightly roughened, but not nearly so much as in the preceding case. The fits recurred a few hours after the application of the trephine, but ultimately ceased. The ulceration of the right arm, which had existed between eight and nine years, healed, and the patient was restored to a comparative state of health.

In the third case the bones of the skull had been extensively destroyed, but in one part the inner table had perished where the outer and middle table still maintained their vitality, as shown in an accompanying drawing. Opposite this point effusion of plastic matter had taken place, and the disease had spread by continuity of action to the brain, and produced red softening of that organ. There was no disease, either in the brain or its membranes, in those situations where the entire thickness of the skull had been removed. In this instance, again, there had been long-continued and most troublesome ulcerations, principally of the right leg, and destruction by ulceration of the eye and nostril on one side. The trephine was here applied to the right parietal bone, in the immediate neighbourhood of the portion of the internal table which had perished. The exact spot was not hit upon; but as softening of the brain had already taken place, and the patient was comatose, any operation in this particular instance was too late.

The author dwelt particularly upon the absence of disease in those parts where the entire thickness of the skull had been removed, and concluded from thence that the early removal of the diseased internal table afforded the best chance of success in such cases. It was evident in the last case that the continued contact of the diseased bone had produced the effusion, first, between the bone and dura mater, then between the membranes of the brain, and that the brain itself had ultimately become diseased by continuity of action. Had this diseased bone been earlier removed the results would not have occurred. The object of trephining in these cases is, then—

1st. To remove the cause of irritation from the surface of the dura mater.

2dly. To allow the discharge of any matter there secreted.

3dly. To establish a healthy suppuration from one part of that membrane, whereby the irritation caused by the prolonged contact of diseased bone would be relieved.

The author directs particular attention to the prolonged, persistent, and recurring ulcerations of the skin, which formed one of the most troublesome symptoms in all the cases. In illustration of the cause of these ulcerations he refers to M. Brown-Séquard's experiments, in which it was shown that, by cutting off the sympathetic nervous influence from a part, the vessels of that part became dilated; and also to M.

Majendie's experiments upon the fifth nerve, by which it was shown that ulceration might follow the abstraction of nervous influence. In the third case destruction of the eye had actually followed, as in Majendie's experiment, and as had also been observed by the author in a case of fracture of the base of the skull in which the fifth nerve had been completely paralysed.

Dr. Brown-Séquard has also shown that, by irritating certain portions of the nervous system, an animal might be rendered liable to epileptic fits. In Case 2 the author attributes the occurrence of the fits to the irritation produced in the membranes of the brain by the continued contact of the diseased bone, and concludes that the removal of even a comparatively small portion of that bone, so diseased, was calculated to relieve the irritation, as it certainly appeared to have done in the cases recorded.

ART. 98.—*Glaucoma, and its Surgical Treatment by Iridectomy.* By Mr. HULKE, Assistant Surgeon to the Royal London Ophthalmic Hospital.

(*Proceed. of Royal Med. and Chir. Society*, June 26, 1860.)

In order to prevent any misunderstanding respecting the nature of the cases in which he advocates the performance of iridectomy, Mr. Hulke gives an outline of the symptoms, the ophthalmoscopic signs, and morbid anatomy of glaucoma.

There are two forms of this disease, an acute and a chronic; but many cases have an intermediate character.

In 75 per cent. or more of all cases, the active stage is preceded by a premonitory period—"*prodroma.*" In acute cases the transition is abrupt; in chronic, it takes place by insensible gradations.

Premonitory symptoms.—Rapidly increasing presbyopia; the appearance of a coloured halo round the flame of a candle; the spontaneous appearance of flashes and other spectra; intercurrent obscuration of vision, attended with vague orbital and frontal pains; slight hardness of the eyeballs, and contraction of the field of vision. The pupil is large and sluggish. The size of the anterior chamber is much diminished. The duration and intensity of these symptoms is very variable, but they are rarely absent.

Acute glaucoma.—The active stage sets in as a sudden and violent outbreak, often at night. Violent racking pain in the eyeball, attended often with sickness, and followed by rapid extinction of sight.

The pupil is widely dilated and motionless; and the lens has sometimes the peculiar greenish tint which was formerly considered so characteristic.

The ciliary vessels are swollen; the conjunctiva is red, and often chemosed. The globe is very hard; the cornea is dull, and its sensibility is lowered. Remissions are followed by fresh paroxysms, and complete irremediable blindness always ensues.

Chronic glaucoma.—The premonitory period slowly glides into the active. The obscurations, which were at first evanescent and separated by long intervals, become more frequent and last longer. The contrac-

tion of the visual field progresses. The tension of the globe increases. The iris becomes dull, the aqueous humour turbid, the cornea dimmed and flattened.

Mr. Hulke lays stress on the flattening of the cornea, which is easily demonstrated, because it has been recently stated that the cornea becomes conical in glaucoma.

Ophthalmoscopic signs.—Excavation of the optic-nerve entrance, and pulsation of the retinal vessels. To these capillary apoplexy of the retina is often added; and sometimes there are small blood-clots in the vitreous humour, which is unnaturally firm. It is only late in disease, when all the component structures are undergoing atrophy, that the vitreous humour becomes fluid.

The nature and causes of the glaucomatous process.—All the leading features of glaucoma are due to excessive tension of the eyeball from a superabundance of fluid within it, which distends the vitreous humour. This fluid, serum, is derived mainly from the choroid; many circumstances show that the retina is only passively concerned. Glaucoma might be considered a serous choroiditis.

Mr. Hancock has advanced the theory that spasm of the ciliary muscle forms an essential part of glaucoma; the author has, however, found complete atrophy of this muscle in dissections of glaucomatous eyes; hence the inference that this muscle is not concerned in maintaining the glaucomatous condition.

The author has been unable to trace any connection between glaucoma and gout or rheumatism. Some other diseases and injuries of the eyeball occasionally assume a glaucomatous type. This is especially the case with wounds of the ciliary region, and sclerotico-choroidal staphyloma.

Treatment.—Generally, the age and broken health of the subjects of glaucoma forbid antiphlogistics. Venesection is inadmissible. Leeches and counter-irritants are useful as adjuncts, but cannot alone cope with the disease. The excessive tension of the globe is suggestive of the evacuation of some of the superabundant fluid by tapping. The old surgeons, Antonius Nuck, Jobus à Meekren, and others, were familiar with this operation, but they practised it chiefly in hypopyon, onyx, and hydrophthalmos.

Wardrop ('Trans. Med. and Chir. Soc.,' 1813) tried it extensively. With a view to lessen fulness and congestion, he tapped the anterior chamber in superficial and in deep-seated inflammations of the eye. The operation was, at first, warmly taken up by other surgeons, but soon fell into disuse.

In our own day, it has been strongly advocated by Desmarres; but it has found little favour with English surgeons, though most have occasionally performed it. In glaucoma, the relief that paracentesis corneæ affords is too transient to render it of much value.

Paracentesis scleroticæ has been practised by Desmarres and Hancock in glaucoma, though with different objects. Mr. Hulke reverts to this, after describing fully the operation of iridectomy as proposed by Dr. A. von Gräfe.

"*Iridectomy*" consists in excising a segment of the iris, in its whole breadth from the pupillary margin outwards to its insertion. This is

effected through an opening of corresponding size at the extreme edge of the anterior chamber. Iridectomy may be practised at any part of the iris; Gräfe usually makes it outwards, but adds that, when desirable for the sake of appearance, it may be made upwards. This latter position has been adopted by Mr. Bowman, and is that which I have generally chosen. By removing the iris in this manner, the pupil is at once enlarged up to the corneal incision, which forms, as it were, the base of a coloboma iridis; and the edge of the lens, with the suspensory ligament stretching in front of the vitreous humour, and the ciliary processes are exposed to view.

The little blood which oozes into the anterior chamber from the cut edges or surface of the iris should be at once pressed out or removed with a scoop.

The after-treatment is very simple. A light compress may be applied for a short time, as a precaution against hæmorrhage. This may be replaced, after an hour or two, by a piece of wet rag. The room should be shaded. Usually nothing else is necessary.

At first the aqueous humour trickles away, but the corneal wound soon heals, and the anterior chamber fills again. The hardness of the eyeball is at once lessened, and a natural tension is gradually attained. The pain abates and soon altogether disappears. As regards vision, the ultimate results are intimately dependent on the period at which the iridectomy is performed, being more perfect where it has been early undertaken than where it has been postponed.

In the premonitory period, where the symptoms are well marked, the propriety of operating cannot be doubted.

In acute glaucoma, where the operation is done during the first inflammatory attack, or soon afterwards, vision is very completely restored.

In chronic glaucoma the results are less uniform and less decided. This is in consequence of the insidious nature of the disease; structural changes in the retina creeping on *pari passu* with the gradually increasing tension.

Alleged objections to Iridectomy.

1. *Its reported uniform failure in the hands of some surgeons.*—This is, in great probability, to be generally attributed to its having been practised in cases which were not true instances of this disease. Many failures have proceeded from its having been done at far too late a period.

2. *The great difficulty of the operation.*—This has been much magnified. It does not require more skill than most surgeons possess, and when chloroform is used it becomes really a simple matter; but even were it difficult, which it is not, in the absence of other known means of cure, we should be no more justified in rejecting it on this account, than we should be in refusing a patient the benefit of herniotomy where the taxis and other measures had failed.

3. *The disfigurement produced by the coloboma iridis* is so slight that it cannot constitute a real objection.

4. *Its supposed injurious action on accommodation.*—Further experience has corrected some misimpression which, at first, prevailed respecting its influence on the adjustment of the eye. The previously existing pres-

byobia is not increased by removal of a portion of the iris; indeed, the refracting power of the globe sometimes actually increases after iridectomy, probably, as Gräfe has shown, in consequence of the flattened cornea resuming its natural curvature.

To avoid these alleged disadvantages, paracentesis scleroticæ has been advocated, by Middlemore, Desmarres, and Hancock, as a substitute for iridectomy.

Middlemore proposed to evacuate the *turbid, diffluent vitreous humour* with a grooved needle, and to replace it with a syringeful of clear water. But, except in very old cases, the vitreous humour is much too firm to flow out along a grooved needle; and few English surgeons would, I think, adopt Desmarres' suggestion of introducing a probe and breaking it up. Mr. Hancock, considering a spasm of the ciliary muscle to be an essential part of glaucoma, divides this muscle by striking a knife through the ciliary region backwards and inwards towards the axis of the globe. But Mr. Hulke has demonstrated, by microscopical examination, advanced atrophy of this muscle in many glaucomatous eyeballs; whence it follows that the ciliary muscle is not actively concerned in maintaining the glaucomatous process. In all probability, the success of Mr. Hancock's operation is solely due to the draining away of some of the superabundant fluid. According to this view, it is simply a peculiar mode of paracentesis, and cannot rank as a substitute for iridectomy until it has been thoroughly established that it *permanently* relieves excessive intra-occular tension, which, in common with most surgeons, Mr. Hulke has found that tapping the vitreous humour fails to do.

ART. 99.—*On Iridectomy in Glaucoma.* By Mr. BOWMAN, Surgeon to King's College Hospital and to the Royal London Ophthalmic Hospital, Moorfields.

(*Medical Times and Gazette*, Aug. 25, 1860.)

"It is impossible," says Mr. Bowman, in answer to a review in the 'Dublin Quarterly Journal of Medical Science,' intending to discredit the treatment of glaucoma by iridectomy, "within the limits of a paper such as this to enter at large on the numerous questions opened by the brilliant researches of the Berlin professor, as to the essential nature of the glaucomatous process, the modifications it assumes in persons of different ages and constitutions, its acute and chronic forms, and its relations with disease of other kinds occurring in the eye or in the system at the same time. These will furnish abundant material for the labours of the coming time; at present, we are concerned with the practical question—How are we to treat the patients of to-day? The reviewer says they are to be treated as they have hitherto been treated, while he allows their incurability by such methods. 'Chronic and acute glaucoma,' he says, 'are nearly always fatal to vision.' He rests so firmly on his prejudices as not to have thought it worth while even to try the new practice, styled by him the 'glaucoma dodge,' which he informs us, 'to the honour of the Dublin School, was openly and fearlessly denounced, by the 'Dublin Medical Press' on February 10, 1858,' that is, before it

could possibly have been submitted to any practical test. What is worse in a man of science and intelligence, he now disparages the treatment on *à priori* grounds, after the world has had three years of the positive testimony of facts in its favour, and he claims credit for dulness in appreciating what is already acknowledged to be most excellent by the ablest ophthalmologists of Europe. But I most of all lament that he should have mentioned, in terms of personal disrespect, the distinguished author of this method, one who has borne so eminent a part in transforming the ophthalmic knowledge of 1850 into the far more advanced and more scientifically based ophthalmology of the present day. The profession in Ireland, and even in England, is interested in discountenancing this tone and attitude in one professing to speak in its name; and were it not that the review is understood to have proceeded from a high and most respectable authority, and has been widely distributed in a separate form, it might have been better to let it pass by in silence.

"In reverting to what ten years have done for ophthalmic science and practice, it is impossible to disconnect the new proposal for treating glaucoma from the general advances, dating from the immortal invention of the ophthalmoscope by Helmholtz, and the recent enlightenment regarding the anatomy and physiology of the eye as a part of modern science. When my friends, Professor Donders, of Utrecht, and Von Graefe, of Berlin, visited our metropolis in 1851, at the time of the Great Exhibition, as young men hardly yet known, it was evident that they were about to take a large share in the development of ophthalmic science. Both highly gifted, and profoundly versed in the more recent physiology, they were devoting themselves to a subject then invested with new and extraordinary interest (for those who could read its importance) by the instrument of Helmholtz. Donders has since founded a School and Hospital of Ophthalmology in Holland, and has enriched science by many physiological, pathological, and practical writings of great originality and value, and by none more than by his great work (just published) on 'Ametropia,' or the nature and treatment of the disorders of refraction and accommodation; of which I trust the New Sydenham Society may be induced to give an early account in one of its admirable volumes. He fully accepts and practises the new treatment for glaucoma. The career of Von Graefe has been not less remarkable; and, as might have been expected from the vivacity of his genius, more dazzling than that of his friend. He also at Berlin has founded a new School of Ophthalmology, and become the centre of progress in Germany. He has penetrated to its depths every subject he has touched upon. His study of the complex problem of the action of the ocular muscles, and his researches on the cognate topics of diplopia and strabismus, exhibit a masterly intellect, acute faculty of observation, and great fertility of resource,—qualities equally displayed in his papers on Iritis, Choroido-Iritis, and Glaucoma. His successive memoirs on the last-named subject in particular are marked by qualities of the first order, the keenest perceptive power, a readiness in detecting hidden relations where least expected, caution in arriving at results, but the utmost boldness in framing measures of treatment answerable to his conclusions when drawn. The intense activity of his mind, and his enthusiastic earnestness of purpose, can hardly be conceived by those who have not witnessed them; while his

liberality towards all his colleagues, and the transparent candour of his disposition, make him universally beloved.

"The term 'glaucoma,' as now understood, embraces much more than the etymology would import, or than the reviewer, imbued with the ideas of ten years ago, seems to suppose. To trace the conditions which often lead to that state of utter blindness, with dilated pupils of sea-green hue, which alone formerly received that name, and to arrest them while still possible, was the aim of Von Graefe, and seldom have researches been conducted in a more philosophic spirit, or been crowned with a happier result, than these.

"The treatment by iridectomy has been no hap-hazard guess, but a rational conclusion gradually worked out. The dominant idea guiding the mind to the appropriate remedy has been that of the existence of augmented intra-ocular pressure, as the main characteristic of the glaucomatous process. In fact, whatever the essential nature of that process, its concomitant seems to be a marked tendency to hardness or tension of the eyeball; and thereupon arise the most serious secondary effects,—paralysis of the retina, oftentimes interrupted circulation, congestion, inflammatory attacks, with their various consequences—ending sooner or later, and with more or less of intermissions, in total loss of sight and a spoiling of all the tissues of the eyeball. The general states met with in practice and falling under the general heads of amaurosis with excavation of the optic nerve, chronic, sub-acute, and acute glaucoma, all seem to be allied to one another, and may be termed 'glaucomatous diseases.' Some are very slow in their progress, and the loss of power in the retina very gradual; there is no inflammation or even congestion; in others there is congestion, slight or considerable, intermittent or continuous. In others, again, acute and intense inflammation arises. A glaucomatous state may also come on in the course of other diseases, choroidal, retinal, or cataractuous. To relieve intra-ocular pressure seems to be a prime indication in all, and it is rational to suppose that it will be the more effectual, the less deterioration of structure the retina has previously suffered. To relieve this pressure is to disarm the glaucomatous state of its chief peril, and apparently to restore the eye to the influence of the reparative powers belonging to it as a living organ. The tension once relieved, and so long as it remains so, the circulation tends to its natural equilibrium, and the retina which has been compressed recovers itself more or less, or ceases to degenerate, in a degree usually corresponding inversely with the intensity and duration of the preceding pressure.

"It is certain that this critic would never have attacked the new practice had he really read Graefe's memoirs, or believed the cures reported by others to be genuine. He says, 'Graefe's doctrines, as published by the Sydenham Society, are plausible, but in a practical science of this nature we require something more than doctrines; cases must be given, and Graefe was wiser than his countryman* of the London Ophthalmic Hospital, and kept his cat in his bag.' Will it be believed that the reviewer can have read the memories of Von Graefe, which he criticises, which are enriched with numerous cases, fully detailed and

* Referring to the report of cases of operations for glaucoma at the Moorfields Hospital, given in the 'Ophthalmic Hospital Reports,' by my friend Dr. Bader, who is quite able to defend himself.

epitomised, and constantly referred to, illustrating all the main doctrines advanced? As for the experience acquired in England, I shall at present speak only for myself; and I can assure the reviewer, in the most decided terms, of the reality of the influence of this operation in relieving, even permanently, the unnatural tension of glaucomatous eyes, and of its effect in arresting the glaucomatous process, and often in restoring sight in a marvellous manner. My own cases in the hospital and in private have been numerous, and bear out the above general statement. This it is that makes me so anxious that the profession should be rightly informed as to the signs of glaucoma in its relievable stages, and should be ready to sanction the timely application of the only known real remedy. I can hardly conceive a greater comfort in practice than to be able, by this operation, to rescue sight thus imperilled, and to escape the disheartening task of treating a disease, evidently tending to blindness, by the old, ineffective remedies. The reviewer may class the eminent author of so great a boon with 'Hahnemann, Preissnitz, and De Leeuw,' but he may depend upon it he will be powerless to 'arrest the spread of the "glaucoma epidemic" in England.' I could, indeed, heartily wish that, when he has further examined into the evidence, and dispassionately perused what he criticises, he will make trial of the operation for himself, in which case I doubt not he will be satisfied with his results.

"In speaking in these terms of iridectomy in glaucoma, I must carefully guard myself from being supposed to uphold it as a sovereign remedy equally valuable in all forms and stages of the disease, and under all its various complications. At present the operation is being extensively tried in cases where augmented intra-ocular pressure evidently exists; and the proved tendency of the operation to relieve this injurious tension, the certain cause of secondary mischief, makes it our duty to employ it, when the patient is otherwise apparently drifting into inevitable blindness. It may be our misfortune, and that of our patients, that our experience is as yet less complete than a few more years will make it; but meanwhile we can only act on the light we possess, and store up the results for the future benefit of others.

"While the modern doctrine and treatment of glaucomatous affections is so new, it is to be expected that errors in the diagnosis may occur even among well-instructed practitioners; and the operation is doubtless in some danger of being brought into discredit by being undertaken in cases to which it is not rationally applicable, or by being defectively executed. I do not see how this can be avoided; it is the necessary fate of all novel proposals, and this one must face the ordeal. It is the part of intelligent men to make allowance for these incidents of human progress, rather than to allow them to prejudice the march of truth.

"In the present state of our knowledge it may be right to try the operation experimentally in some cases to which more extended experience may show that it is not usually applicable. Experience hitherto shows that it is most valuable when performed *early* in *acute cases*, in which turbid effusions exist, the absorption of which goes on rapidly when the tension is relieved. Temporising measures in such cases, such as bleeding, mercury, colchicum, and even simple puncture of the eye, whether of the aqueous or vitreous regions, are not to be relied on, and occasion dangerous delay. It is also most useful if performed in the sub-

acute form, when the visual field is not as yet seriously contracted, but where the symptoms are steadily advancing. If postponed here till the sight becomes greatly impaired by gradual alteration of the tissues of the retina and of the optic nerve-entrance, the ultimate advantage is smaller, though usually lasting. In many instances we are called on to treat patients already almost blind from the progress of the disease under one or other of its various forms. Here it has often been the means of sparing them a little sight, sometimes permanently, at others not. I have also tried the operation in some examples of blind and tense glaucomatous globes, the seat of excessive or wearisome pain, and on several occasions have been well satisfied with the result. How intractable such cases are apt to be under the usual palliatives is well known.

"As for the operation itself, a large experience has convinced me that, though usually a simple proceeding, not liable to accidents, it is occasionally one of the most delicate and critical in its nicety of all the operations on the eye. The anterior chamber has to be entered at its extreme rim, where the sclerotica overlaps the cornea, close in front of the iris, which often bulges much, and which must on no account be pricked, lest the vitreous humour or the lens, immediately behind, should be wounded; in either case a most serious complication. The bulging of the lens, in many cases, and the dilatation of the pupil, add to the risk of injury to the lens. A little blood, too, escaping into the anterior chamber, either before or after the excision of the iris, may obscure the parts from view, and add to the chance of involving the vitreous humour or lens. It is obvious that these difficulties and contingencies ought to be acknowledged and recognised in order that they may be guarded against. In very few instances indeed can they lead to accidents in skilful hands. When blood occupies the anterior chamber in the course of the operation, it is wise to remove it, either by a gentle stroking movement of the *curette* over the cornea towards the incision, or, if that do not suffice, by carefully introducing the end of the *curette* within the incision itself. On two occasions only have I known the lens to become opaque after the operation, where the capsule was not directly injured (as it ought never to be) by the instrument. One of these was in my own practice, another in that of a highly esteemed colleague.

"I am unwilling to extend this already long comment on the review by any inquiry as to the *rationale* of the operation; but there is much in favour of Von Graefe's original suggestion, that the diminution of intra-ocular pressure may be largely due to the lessening of the iris as the surface secreting the aqueous humour. My own opinion, however, was, and is, that the more direct communication opened between the vitreous and aqueous regions of the eye facilitates the play of currents between them, and thus allows an excess of fluid behind to come forward to the corneal surface, through which exosmosis is much easier than through the posterior coats, the sclerotic, choroid, and retina. This would go far to explain the apparently contradictory influence of the operation in raising the tension to the natural degree when previously diminished; for this also it is capable of doing in some cases, as shown long ago by Von Graefe himself. That the size of the piece excised in glaucoma has a direct relation to the effect produced is true according to his latest observations, confirmed I believe by those of Donders, and of Arlt, the distinguished and most able professor of Vienna. I can also add my own

corroborative testimony. Von Graefe is thus led (in his latest memoir, just published) to insist once more, as he had done in his first paper, on the necessity of removing a considerable portion of the iris (not, however, so much as a third, or even a fourth, of its circuit), where it is wished to reduce permanently the intra-ocular pressure. A small iridectomy is insufficient, much less any mere puncture, such as some are still inclined to rely upon.

"In conclusion I may remind the reviewer, that after the reading of Mr. Hulke's excellent paper on the Pathology of Glaucoma, at the Medical and Chirurgical Society (see previous article), on January 12, 1858, both Mr. Critchett and myself endeavoured, from our own experience, to enforce the importance of Von Graefe's new proposal, and that in our weekly operations at Moorfields, all comers have had the opportunity ever since of watching the progress of our numerous cases, as well as those of our colleagues."

ART. 100.—*On Iridectomy and Glaucoma.* By Dr. WILDE.

(*Dublin Hosp. Gaz.*, Sept. 1, 1860.)

Dr. Wilde is no believer in glaucoma and iridectomy as professed at Moorfields, and, from what is said in the present communication, it appears that more than one English ophthalmic surgeon of note are of the same way of thinking. Dr. Wilde writes:

"The senior member of the oculist art in England, the venerated and now venerable William Lawrence, whose writings on the subject are known all over the world, is opposed to the operation, and has thus expressed himself to the author of the review* in a letter dated 12th of August, which is now before me:—'This able and well-timed exposure of the iridectomy delusion is of great service to the public, not only on account of the mischievous character of the proceeding, but from the quarter of its introduction into England, which has given it undeserved respectability and patronage.' Mr. Dixon's opinion, in which he denounced the operation, is already before the public, and has been quoted in the review in question. In addition, I may insert the following letter just received from him:

"'You ask me what is my present opinion of iridectomy? To answer this question I must go a little into details. If the operation is to be judged of simply by the general result of the cases in which it has been performed, I should say that no mode of surgical treatment, proposed within my remembrance, has been more frequently done without benefit, or *even with positive damage to sight*. The definition of glaucoma, especially of chronic glaucoma, is so vague, that those who have had but slight practical acquaintance with eye-diseases, and know glaucoma chiefly from written descriptions, are constantly liable to mistakes in diagnosis; while the comparative ease with which iridectomy may be performed encourages many to undertake it who would be deterred from attempting an extraction or an artificial pupil by the acknowledged difficulty of such delicate operation.

* Glaucoma and Iridectomy Epidemic, in the 'Dublin Quarterly Journal of Medical Sciences,' August, 1860.

"'Cases have come under my observation in which iridectomy had been performed for so-called chronic glaucoma, but where the real disease was partial cataract, detached retina, or simple atrophy of the optic nerve. Nay, I have known instances of the reflexion from old corneal opacities, or even that from an opaque lens, dislocated into the vitreous chamber of a blind eye, to be mistaken for the peculiar tint of glaucoma.

"'It would be matter for deep regret if merely negative results had followed these needless operations; but it is truly lamentable to reflect that iridectomy, hastily undertaken without a previous careful diagnosis, has often transformed a partial into a complete opacity of the lens, in patients ill suited to undergo subsequent extraction, at the same time, perhaps, giving rise to serious internal hæmorrhage.

"'Of course, it is not fair to hold the originator of a new invention responsible for all the excesses of his followers and imitators; and, therefore, it would be unfair to test Graefe's operation by the strange applications of it which rapidly followed the announcement of his discovery. One cannot but feel, however, how much mischief was done by the broad and unqualified manner in which iridectomy was first put forward as a "cure for glaucoma," without a due explanation being given of the limits of its applicability.

"'These limits appear to me to be narrowed to those cases of acute inflammation, characterised by the following symptoms:—a sudden attack of pain, at first dull, then rapidly becoming acute, and assuming the character of neuralgia throughout the opthalmic division of the fifth nerve; loss of vision within a few hours or days, the second eye being often attacked very soon after the first. Along with these subjective symptoms, the following, of an objective kind:—great injection of the sclerotic, an irregularly dilated and fixed pupil, with peculiar slaty discoloration of the iris; an uneven and hazy condition of the corneal epithelium, and an unnatural hardness of the eyeball.

"'You well know how hopeless these cases have always been, coming on, as they so often do, in enfeebled and unhealthy persons, and extinguishing sight before our remedies have time to act. Now, in these cases, I have seen marked relief attend the evacuation of the aqueous humour through a large corneal opening, and so great has been the benefit of this proceeding that I have often found it unnecessary to interfere with the iris; but, in other cases, the acute symptoms have returned, and I have then removed a portion of the iris with permanent benefit. I have made my incision in the cornea quite close to the sclerotic, but not absolutely in the latter tissue, as recommended by Graefe himself. Neither have I removed such a large portion of iris as he does, for it seems to me that to establish a free communication between the anterior and posterior chambers of the aqueous humour is the aim of iridectomy, and that, if this is effected, all further removal of iris can only do harm by the after-deformity of too large a pupil.

"'But there seems to be a disposition just now to treat the iris with very little ceremony, for the latest German discovery consists in removing a cataract by making a *small* corneal section, and pulling out the nucleus of even a firm lens with a large spoon-shaped scoop, the

iris being freely cut away as a preliminary step, by way of preventing prolapsus iridis, so troublesome a complication of the ordinary operation of extraction. Certainly a very effectual means of preventing prolapsus iridis; but what is to be said of the prolapsus *humoris vitrei*, which the spoon is so likely to cause when thrust behind the lens?

"'If iridectomy had been announced as an operation for relieving certain forms of acute inflammation of the eyeball, it would have conferred a real benefit on opthalmic surgery; but brought forward, as it has been, as a "cure for glaucoma," extravagantly praised as forming a new era in surgery, and illustrated by such a multitude of incredible cases, it has proved a fruitful source of delusion and disappointment.'

"Mr. France, ophthalmic surgeon to Guy's Hospital, and already known by his writings as a sound practical oculist, writes to me as follows:—'I have been strongly tempted to write a note of acknowledgment to the author for the good service to the cause of truth, humanity, and rational surgery, which it is calculated to effect. I, for one, cordially approve the fearless exposure this paper contains of as transparent a system of loose unconsequent reasoning and disregard of results as has ever called down the reviewer's castigation. It is well that so spirited a protest should be made in the name of legitimate medicine, against this prevailing epidemic, which is, however, but one manifestation of a *cacoethes operandi* now reigning. Mr. Bowman has, it is stated by medical reporters, cured many cases of glaucoma and iridectomy; but he himself has never put forward to the profession a single specific instance thereof under, as stated by the reviewer, "his hand and seal." How many of these *cures* may be among the eighty-four eyes operated on in the fifty-five cases in Moorfields Hospital, the sad but not unexpected results of which have been so precisely set forth by Dr. Bader, is more than I can tell.' Mr. White Cooper has thus written to me:—'Apart from its being yet on its probation, I think that the operation of iridectomy is too lightly regarded; the impression appears to exist, amongst a large number at least, that it is a mere prick, and that no harm can possibly result from it; that serious consequences *must* and *do* result I know, and I certainly attach more importance to the proceedings than appears to be the case with many.' Mr. Haynes Walton, author of our best work on ophthalmic operative surgery, says, in a communication I have just received from him:—'The author of that article has done the world a favour, and I thank him.' Why, I would ask, should these gentlemen, together with Jüngken of Berlin, Minten of Stockholm, Sechel of Paris, Dr. Jacob, myself, and many others, protest against an operation which would *restore sight*, relieve suffering, advance science, and bring money into their pockets—if such a mode of cure were really true? The only answer I know of is that which the ignorant public bring daily against the 'prejudices of the profession' in the matter of Turkish baths, 'brandy and salt,' or such other ephemeral delusions.

"One word more before I have done. It was well known that Sir Benjamin Brodie's sight had been failing for some time past; the cause was believed to be cataract, a diagnosis to that effect having been made by a sound practical surgeon. When I was in London some weeks ago, it was rumoured that he had been operated on for glaucoma! It would

be unjustifiable in me to enter into the details of the case as they were rumoured about, but I may remark that the profound silence which was observed by the friends of the baronet, and others, as well as by the officers of the Royal Society, gave an air of mystery to the proceeding which was unaccountable, except upon the supposition that in due process of time this great triumph of iridectomy in glaucoma, submitted to by the acknowledged head of the profession in England, and the president of one of the first societies in Europe, would be trumpeted abroad, and for ever crush the opponents of the new German operation. Pending the result, I refrained even from speaking upon the subject—although Lord Brougham had at the recent statistical congress, when apologising to a large assemblage of medical men, and the public, for his not being present, 'regretted the *cause* of Sir Benjamin Brodie's absence.' Now, however, the matter is no longer in private keeping; it is public property. A *Taunton* paper having published an account of Sir B. Brodie's defective sight, &c., that statement went the round of the newspapers, when the following cautiously worded article appeared in the *Times*, and was copied into many papers:—'We are authorised to state that he has lately undergone an operation for the improvement of his sight, and that a satisfactory result is anticipated.' So say all of us; but in the last number of the 'Medical Times and *Gazette*' we have a short leader on the subject of that announcement, to the following effect:—'Iridectomy was performed under chloroform. We deeply regret to say that the result is not so satisfactory as the leader in the *Times* would lead the profession to hope. The left eye may be believed to be much in the same state as before the operation, if anything slightly improved; but in the right or better eye, vision is quite lost. The ground of hope in this case is, that as there is *now* a cataract very evident in the right eye, that this is the cause of the impaired vision; that the eye is *not glaucomatous*, and that, hereafter, vision may be restored by extracting the cataract.' It is, therefore, manifest—if this be true—that in this case there must have been something very peculiar, either in the diagnosis or in the practice. The announcement, thus made public by a London periodical, will, I am sure, be received with extreme regret by the medical profession in Ireland, by whom Sir Benjamin Brodie's merits, in every walk of life, were duly appreciated. And should the case unfortunately turn out as conjectured, it will prove a severe blow and a heavy discouragement to the promoters of 'The Glaucoma and Iridectomy Epidemic.'

ART. 101.—*Rheumatic Ophthalmia cured by galvanism. By the Marquis Leger.*

(*Lancet*, Sept. 30, 1854.)

CASE.—R. J——, [illegible] attacks of rheumatic [illegible] *come permanently contracted*, and [illegible] warned that a repetition of [illegible] sight, he was [illegible] tried might not exist. [illegible]

to the limbs removed rheumatic pains; he therefore thought that a modified current applied to the eye at the commencement of an attack might prevent its occurrence, and if applied for a sufficient length of time the cure might be permanent. On *the approach* of the next attack, he accordingly applied an excited thirty-six link Pulvermacher chain, the positive pole upon the spine, the negative upon the closed eyelid, upon retiring to rest. This was allowed to remain on during the night. In the morning, *every trace of the disorder had vanished.* Other attacks followed at gradually increasing intervals of time, but they were invariably arrested by the same means, the consequence being, that during the last five years R. J— has found that his eyes have been gaining strength, enjoying the uninterrupted use of his sight during the whole time. The above case, communicated by the patient himself, requires no comment from me, as it is related in so plain and straightforward a manner. At the same time, I may corroborate it by stating, that *in all cases of ophthalmia* for which I have used the continuous galvanic current a rapid cure has been effected.

ART. 102.—*Influence of season on the prevalence of Ophthalmia in India.* By Dr. JOSEPH EWART, of the Bengal Medical Service.

(*Indian Annals of Med. Science*, April, 1860.)

In an elaborate essay on the vital statistics of the Meywar Bheel Corps is the following table, exhibiting the prevalence of ophthalmia amongst the men of this corps during seventeen years:

Months and Quarters.	Aggregate monthly admissions.	Monthly per centtage of admissions to strength.	Months and Quarters.	Aggregate monthly admissions.	Monthly per centtage of admissions to strength.
17 Septembers	218	1·303	15 Marchs	64	0·428
17 Octobers	153	0·910	17 Aprils.....	87	0·520
17 Novembers	83	0·492	17 Mays	40	0·239
1st Quarter.....	454	0·901	3d Quarter	191	0·395
17 Decembers	62	0·369	17 Junes.....	51	0·301
17 Januarys	41	0·242	17 Julys	85	0·505
16 Februarys	34	0·213	17 Augusts.....	197	1·160
2d Quarter	137	0·276	4th Quarter	333	0·656

Commenting upon this table, Dr. Ewart says:

"The seasonal variation in the prevalence of ophthalmia is well marked in this table. In July there is a perceptible augmentation of ocular disease. It is during this month that the Bheels are busy preparing the soil for the reception of the makkee, thooree, rice, &c., when they are subjected to much exposure, wet, great and sudden vicissitudes of weather and temperature. In August the disease is *twice* as frequent as during the preceding month, nearly *four* times as abundant as in June, and *five* times as prevalent as during May. In September, when there may or may not be a goodly fall of rain, and when

there is always much sunshine, intense glare, and copious generation of malaria, the *maximum* prevalence is reached. During this month, the Bheels expose themselves freely in their fields in agricultural pursuits. In October the disease is very common—more common, indeed, with the exception of the two immediately antecedent months, than during any other month of the year. It gradually declines till February, in which month the *minimum* prevalence occurs. With the advent of elevation of temperature, and of an atmosphere liable to be highly impregnated with organic and inorganic particles, ophthalmic disease increases through March and April, to decrease again in May, when the Bheels and others in the regiment are released from all extraneous employment, and keep pretty much, during the day, to their houses, to avoid the mid-day sun.

"Out of 1115 cases of ophthalmia, 651 occurred during the 17 Augusts, 17 Septembers, 17 Octobers, and 17 Novembers; the remaining 464 during the other two thirds of the 17 years.

"The great abundance of ophthalmia, during the rainy and drying-up months, has been attributed to a habit which the Bheels have of 'always keeping their houses filled with the smoke of green wood, to prevent a very troublesome species of gadfly from annoying their cattle, which live under the same roof with themselves.' Dr. Bowhill correctly credited a large share of the causation (in September) to 'great exposure and a clear atmosphere combined.' And he accounts for the few cases met with in May, when the glare is great, to the absence of mid-day exposure and of any cultivation whatever.

"It is curious to note the increase and decrease of ophthalmia proceeding almost *pari passu* with the increment and decrement of malarious fevers. There is strong presumptive, if not positive evidence, in the above table, if viewed in connexion with Table VIII,* of the influence

* TABLE VIII.

Exhibiting the Prevalence of, and Mortality from, Fevers amongst the men of the Meywar Bheel Corps, during monthly and quarterly periods, for 17 years.

Months and Quarters.	Aggregate monthly admissions.	Aggregate monthly deaths.	Monthly per centage of admissions to strength.	Monthly per centage of deaths to strength.	Monthly per centage of deaths to admissions.
17 Septembers	1222	2	6·709	0·011	0·163
17 Octobers	2145	3	12·76	0·017	0·139
17 Novembers	1473	7	8·74	0·041	0·475
1st Quarter	4840	12	9·60	0·023	0·247
17 Decembers	996	1	5·93	0·059	0·104
17 Januarys	510	2	3·01	0·011	0·392
16 Februarys	407	3	2·55	0·018	0·737
2d Quarter	1913	6	3·85	0·012	0·313
15 Marchs	388	2	2·59	0·013	0·515
17 Aprils	310	0	1·84	...	...
17 Mays	188	1	1·12	0·005	0·531
3d Quarter	886	3	1·83	0·006	0·338
17 Junes	274	1	1·62	0·005	0·364
17 Julys	464	0	2·75	...	...
17 Augusts	679	6	4·00	0·035	0·883
4th Quarter	1417	7	2·79	0·013	0·494

have a direct bearing upon this subject, seeing that these investigations show, that in several of the lower animals the abnormal introduction of sugar into the system (whether by immersion of the body in syrup for a sufficient time for the osmotic process to take place freely, or by injection beneath the integument), is almost certainly followed by the development of lenticular cataract.

ART. 105.—*Case in which the Lens was dislocated during a fit of sneezing.* By Mr. JABEZ HOGG, Assistant-Surgeon to the Royal Westminster Ophthalmic Hospital.

(*Lancet*, July 16, 1860.)

The present case is probably one of the first, if not the first, recorded, in which this accident occurred after a fit of sneezing, in an eye disposed to such an accident. The case likewise shows the value of the ophthalmoscope in determining the cause of the indistinct vision in the other eye, which had been previously unsuspected.

CASE.—A. B—, æt. 36, a German, had always been myopic. Two months ago, the sight of the left eye became unusually acute, so much so that objects appeared as though seen through a magnifying-glass, the nose seeming to him very prominent, and thereby causing much discomfort. On the 18th of April he was taking a walk, the sun shining strongly on his face, when suddenly he felt as though blinded in the left eye; he immediately put his hand up and rubbed it. It should be stated that just previous to this he had a violent fit of sneezing. The sight of the eye was not lost, but he became very near-sighted. He was seen by Dr. Graseman soon after the accident, and by his advice he consulted Mr. Hogg. The lens was distinctly seen in the anterior chamber, and had a most beautiful appearance. Mr. Hogg recommended the pupil to be kept dilated by atropine, and the patient to remain in the recumbent position; but, however, he would not consent to the confinement. On the 26th of April inflammation set in, with photophobia, and the night was one of most intense suffering, so much so that he attempted to jump out of the window. Leeches were applied to the temple, morphia taken in large doses, and subsequently chloroform administered, but without alleviation of the extreme pain. On the 27th, nine days after the accident, he was admitted into the hospital, when Mr. Hogg extracted the lens under chloroform. The operation was obliged to be very quickly performed, as the anæsthetic produced very alarming symptoms. At seven p.m. he was comfortable and free from pain.

April 28th.—Had a good night, without the administration of an opiate.

29th.—Still remains easy and free from pain.

30th.—Did not pass quite such a good night, but on the whole he is going on well.

May 4th.—To-day the eye was opened, and found to be progressing favorably.

11th.—A small piece of the iris has cicatrized in the wound of the cornea. To be gently touched with the nitrate of silver, and a drop of sweet oil applied to the eye afterwards. The sight remains very good.

13th.—Being very anxious to go out, he was discharged, and has since quite recovered.

The lens, after extraction, was perfect and transparent, apparently uninjured, except in form. When the eye was first examined—that is, two days

after the accident—neither the vessels of the retina nor of the choroid were changed, or in any way congested. The lens, in the anterior chamber, pressed upon the iris, producing considerable concavity, and, acting as a foreign body, was the cause of the ciliary neurosis and torturing pain. It should be mentioned that the sight of both eyes, more especially that of the right, had been weak for several years, for which he had consulted more than one ophthalmic surgeon in his own country; but, until he was examined with the ophthalmoscope by Mr. Hogg, he was not aware that one half of the lens in the right eye was opaque; consequently, he could only see through the crescentric half of the lens on the nasal side; and this at some future time will require extraction.

ART. 106.—*Case of Non-congenital Daltonism.*
By Dr. CLEMENS, of Frankfort.

(*Gaz. des Hôpitaux*; and *Amer. Med. Monthly*, Sept, 1860.)

It is known that many persons are affected congenitally with blindness to all colours, or to certain of these, or rather that many persons receive from certain colours an impression differing from that ordinarily produced. Cases in which this alteration is *acquired* are comparatively rare, and hence the following is of interest.

CASE.—A lady, 32 years of age, always enjoying good health, the mother of three children and then in the fifth month of her fourth pregnancy, was walking with her friends. They met a woman wearing a flashy, red shawl, which attracted attention; the lady making no remark at it, her opinion was asked, and she answered that she saw nothing extraordinary, as the shawl was of a gray-mixed colour. This was probably the beginning of the disease, since the husband stated that some days afterwards his wife, in buying goods, rejected some because they contained red and yellow. About the middle of her first pregnancy an analogous condition existed for a short time. She was working at a piece of embroidery requiring many colours, and on different occasions the colours seemed, as it were, to run into each other at their lines of contact, and when an effort was made to determine the terminal lines of the colours, she saw a mixed gray, and a nausea supervened, almost producing vomiting. Her eyes appeared a little dissimilar—the left being somewhat more prominent than the right; the pupils were slightly dilated, and not very sensible to light. All the functions were normal. None of her relatives have been affected with this alteration of vision. The patient often confounds red and green in a peculiar manner. Thus, if the two colours are shown at the same time, they are confounded the one with the other, while the red being shown by itself is never taken for green. Flashy red objects, seen alone, appear of a dirty, grayish-brown. The loss of perception of red is in no instance more marked than when a pure red is shown on a white background; for example, carmine on a porcelain saucer. All that remains of the colour is its skeleton; that is, the shade.

During ten days the phenomena seemed to increase; red and green became more confounded, and the shades of other colours were only recognised by careful attention. Thus she confounded yellow colours with orange, and blue with light-red tints.

Dr. Clemens follows this report with physiological and pathological considerations in this disease of vision and other analogues. Passing in review the different theories which have been advanced on the subject, he shows their

unsoundness; and attaches himself to the theory of Schapenhauer, which does not recognise colours as having an existence in themselves, but as products of the retina.

Art. 107.—*Case of Lead Amaurosis.*

By Dr. R. Scott Orr, Physician to the Glasgow Royal Infirmary.

(*Glasgow Medical Journal*, Oct., 1860.)

The following case is given as one of lead amaurosis—a very rare affection in this country. The diagnosis, however, may be questioned, for the symptoms seem to point to apoplexy resulting from the epileptiform seizure, and producing blindness as one of its consequences, rather than to amaurosis in the ordinary sense of the word.

Case.—George K—, æt. 12, was admitted June 29th, 1860, into ward 14 of the Glasgow Royal Infirmary. The patient went to work at a pottery three years ago, a healthy boy, but by birth predisposed to scrofula. The first two years he enjoyed uninterrupted health while working at the clay. At the commencement of the third year he was removed into the glazing department, and his duty there was to take the various articles of crockery from the man who dipped them in the glazing tub and pile them up. A few months after beginning this new employment, his appetite and general health began to fail; and when he had been about seven months so employed, he suffered severe pain in the belly. No further information relative to the symptoms at this period could be obtained. For the last four months, however, the father of the patient states that he and the neighbours observed a blue line along the edge of the gums. Six weeks after, a doctor was applied to. The main symptoms then were debility, pains in the abdomen, and constipation. The medical man recommended castor oil and laudanum, and enjoined attention to cleanliness and change of clothes after work. This advice was not properly followed. The boy continued at the pottery. On the 7th of June, while at work, he felt shivering and uncomfortable, and though it was a hot day kept warming himself at the fire. In the evening of that day vomiting came on, and he complained of pain in the jaw. This was immediately followed by an epileptic convulsion. The muscular contractions began in the abomen, and extended upwards to the throat; the jaws were so violently brought into con tact that a tooth was dislodged; the eyes rolled upwards; and lastly, the muscles of the limbs were affected. For an hour after the convulsion the patient lay perfectly motionless, and then became very restless and talked incoherently. In about nine or ten hours he had a second convulsion, and after nearly an equal interval a third, and again a fourth. Each fit lasted for one minute; they were all preceded by vomiting a dark-coloured matter, and followed by symptoms similar to those which succeeded the first fit. Altogether, the patient lay unconscious for fifty hours. During this period active purgatives were administered by the mouth and rectum; two evacuations of very black, tarry matter were thus obtained. For two days after this his mind wandered a little, and for some days more he complained of considerable pain in the epigastric and umbilical regions, but was able to walk about the house. Seven days after the occurrence of the convulsions, it was noticed that the patient could not raise his cup to his mouth, and this was the first observed indication of the existence of paralysis. He now began to complain of pain in the head; it came on gradually; for a week it seems to have been extreme, but for the last week it has been diminishing in intensity. From its com-

mencement till the present time, the paralysis has been on the increase. He has been almost quite blind for at least two days.

On admission, patient still complains of his head, and frequently gives a deep sigh expressive of pain. He lies helplessly in bed; occasionally has fits of restlessness. Though quite sensible he rarely speaks, except in answer to questions; memory seems unimpaired, the eyes are unnaturally prominent, and the pupils widely dilated. The paralysis, though incomplete, is widespread, and the external muscles are wasted and very soft; those of the upper extremities are most affected. The debility is so great that it masks the extent of the paralysis. Patient can extend his fingers pretty well, especially those of the right hand; supination is best performed by the left; loss of motion appears unaccompanied by any diminution of sensibility; the left side of the face is fixed and devoid of expression; there is also considerable dysphagia, which has existed for some days; the abdomen is doughy to the feel, and still painful; the skin is dry and sallow, it is traversed by large veins. For a long time the patient has experienced a peculiar taste in his mouth, but he is unable to describe its character; a well-marked blue line fringes the margin of the gums; the teeth are covered with brownish stains; pulse very feeble; bowels opened yesterday, not since, but there is frequent desire to go to stool.

July 1st.—To-day he is less restless, and had a good night, with some sleep. He is conscious and answers questions distinctly and intelligently; pupils less dilated; pulse 112, weak.

2d.—Is weaker to-day; pupils insensible to light, left contracts slightly; he is in a semi-comatose state, but quite intelligent when roused. Pulse 100, extremely weak; great debility.

5th.—Spent an exceedingly restless night, and was very abusive in his language to the nurse, calling her all sorts of names.

9th.—To-day lies on his back in a most debilitated condition, but still answers questions when roused. Pulse 100; gums lined with a rim of sordes; tongue covered with a thin, white fur; great thirst.

11th.—To-day it was noticed that both eyeballs were fixed and immoveable. Left conjunctiva is considerably injected and inflamed, and a pretty copious purulent discharge exudes from its surface, glueing the eyelids together; partial ptosis of left upper eyelid. He appears to have more power in his upper extremities, and frequently raises the left to his face.

13th.—Pupils less dilated; has some power to move the eyeballs; still quite blind; cannot close right eyelid, which remains half open.

16th.—Pupils dilated as much as ever; left side of face quite paralysed, remaining perfectly motionless when he tries to whistle or laugh, which he was to-day asked to attempt; has more power to close left eyelid, and moves slightly his eyeballs. Pulse continues very weak; is rather stronger, and moves his hands and arms better.

At this date I resigned my patient to my colleague, Dr. Fraser, who took charge of the ward in which he lies, and he has since been under his care. I visited him on the 10th of August, and found his general condition very much improved. He was much stouter and stronger, and could walk about the ward; the facial paralysis almost entirely gone, the mobility of the eyelids and eyeballs very greatly increased; but no indication of returning vision. The blue line was still remarkably distinct along the upper gums, but absent along the lower.

Examined with the ophthalmoscope, the vessels of the retina were found to be congested, with effusion of blood and ecchymosed patches on the surface of the membrane.

Art. 108.—*A case of Neuroma of the Optic Nerve.* By Dr. John A. Lidell.

(*New York Journ. of Med.*, March, 1860.)

The common seat of neuromatous growths is in the *cerebro-spinal* system of nerves. M. Bérard once met with a case in which a *ganglionic* nerve was implicated. The case about to be described by Dr. Lidell appears to be the only case on record in which the *optic nerve* was implicated—almost the only one involving a nerve of special sense. It is, very possible, however, that individual cases of neuroma of the optic nerve have passed for cancer of the eye or orbit, or both, to which disease, in an advanced stage, neuroma bears some resemblance, and so, possibly, the diseased mass has either not been extirpated, or, if extirpated, has not been properly examined.

Case.—In the latter part of July, 1858, a pale and rather spare young woman, æt. 20, named J. L—, applied to me for advice concerning a large, red fleshy-looking, elongated, and rounded mass, which filled the left orbit, and protruded therefrom, so as to hang over the cheek almost as far as the level of the nostril.

She and her mother together gave the following history. Her health had been good till the spring of 1850, when she was twelve years old. Previously, she had had measles, scarlet fever, and hooping-cough, but had them so light as not to produce any difficulty worth mentioning. In the spring of 1850, she, along with other children, took the mumps, which involved the gland on both sides of the neck. The difficulty in the right gland followed the usual course, which was not the case, however, with the one on the left side. The swelling in this gland did not readily subside, but it remained enlarged and troublesome for nearly a year. In the latter part of the same summer (1850) the left eyelids became swelled. At the same time the right eyelids were natural. This palpebral tumefaction lasted two or three months, or till the last of autumn. At first her mother supposed it was produced by poisoning with ivy (*rhus radicans*—they lived in the country), but this conjecture was negatived by the fact that the swelling was confined to the left eyelids, and lasted for so long a time. Four or five months after the palpebral swelling had disappeared, that is, in the spring of 1851, she found the sight of the left eye was becoming dim. Objects, when seen through this eye alone, appeared to be in a mist or haze. She could, however, distinguish the scholars, as they sat in their places in school, so as to recognise them. At the same time the sight in the right eye was unimpaired. The left parotid gland still continued to be enlarged. Through the remainder of spring, and the following summer, the dimness of sight increased so rapidly that in the fall (1858) she could only distinguish light from darkness. During all this time she did not suffer any pain, nor muscæ volitantes, nor coloured spots, nor flashes of light in the affected eye, so far as she remembers. About this period, *i. e.* some time in the fall of 1851, she noticed that this same left eye began to protrude. After this, the perception of light rapidly became fainter, and soon disappeared; the eye gradually protruded more, until, twenty months afterwards (June, 1853), the eye protruded so much that the lid could not be closed over it. Her mother says that, at this time, the eyeball itself did not seem to be much enlarged; also, that the pupil was widely dilated, and that everything behind the pupil appeared to be dark coloured. She was positive she never saw any yellowish or shining metallic appearance behind the pupil. The patient says that at this time the eye was distinctly moveable in front of and upon the sub-

stance, whatever its nature might be which caused the protrusion, and had been thus moveable for some time previously. In this statement she was very positive. Up to this time she had not suffered any pain, except about a year before, when a compress was applied by the late Dr. White, of Cherry Valley. Having tried various remedies without benefit, he resorted to compression, for the purpose of arresting the protrusion, but, after continuing it about two weeks, was forced to abandon it, on account of the severe pain it occasioned. After the compress was removed, the pain ceased. Up to this time her general health had not suffered.

In the latter part of June, 1853, her symptoms underwent a material change. On the day subsequent to a long walk (five miles) under a hot and bright sun, she had a good deal of pain in the affected eye, which became red, and speedily swelled to a great size (conjunctivitis). The eyelids also were much swelled, and purplish in colour. During the following fortnight she suffered very much from the severity of the inflammation; at the end of this period the eye broke, discharging water (aqueous humour) and matter. After this the pain abated, and the inflammation gradually subsided, till it entirely disappeared by the following October. In the meantime, the patient's sufferings had been so severe as to wear her down very much, affecting her general health, and making her thin, and pale, and weak. Much of the ophthalmic enlargement became permanent; that is, the original swelling increased very rapidly during the late period of activity. During the following winter she got on tolerably well; her general health improved, but she was occasionally troubled with paroxysms of pain, neuralgic in character, in the left eyebrow, left half of forehead, and the left cheek. The morbid growth had probably attained such a size as to press considerably on the supra and infra-orbital nerves. In the winter of 1856 and '57, she had fever, which lasted six weeks, and left her very weak for a long time. This did not seem to affect the local disease one way or the other. The ophthalmic swelling slowly increased in size, and the neuralgic pains in the left eyebrow, forehead, and cheek, gradually increased in severity until I first saw her (July, 1858). For some time before this, she says she had suffered great distress, the paroxysms of pain being frequent and severe. She also says that any considerable amount of pressure upon the protruding mass, or the handling incident to a physical examination of it, produces, besides the supra- and infra-orbital neuralgia (by which I mean pains intermittent, and like electrical shocks), an aching pain in the mass itself, so severe as to deprive her of her sleep for the following thirty-six or forty-eight hours. A mis-step in walking, whereby the diseased parts are jarred, produces a similar distress, varying only in intensity. She is not subject to any other pains in the head than those mentioned; except, perhaps, more or less of a sense of distension in the orbit. She has partial deafness in the left ear, but was not aware of it till I ascertained it during the examination. She menstruated at fourteen, and has always been regular. There is no hereditary disease in the family.

The patient sits with her head dropping partially forward, apparently from the weight of the tumour. On close inspection, the protruding mass is seen to be regular in shape, rounded, elongated, and somewhat conoidic at the end, and to hang down almost to the level of the nostril; the upper eyelid is thrust forward, and stretched down over it to the breadth of two inches; the tarsus and ciliæ are sound; the skin is natural in colour; and the eyelid, notwithstanding it is stretched so much, is everywhere moveable, in some degree, over the morbid growth; and near the tarsal border is a vein enlarged, blue, and tortuous. At the opposite or conoidic end of the tumour is a pearl-coloured, nearly circular spot, three fourths to seven eighths of an inch in

diameter, evidently the opaque remains of the cornea, which had been destroyed in 1853. Between this pearl-coloured, opaque spot, and the tarsal border of the lid, the tumour is dark red in colour, and is covered with a granular membrane, which secretes a muco-purulent fluid; this is evidently the ocular and palpebral mucous membrane, pushed down from its natural situation, and stretched over the morbid mass; this dark-red, granular, and thickened conjunctiva is not reflected beneath the eyelid, but terminates abruptly at the tarsal border thereof; no ulcerations are present, and this mucous membrane is, in some degree, moveable (non-adherent) throughout its whole extent. Beneath the middle of the upper eyelid, there is a semi-fluctuating sensation imparted to the touch (deep-seated fluctuation). In every other part the tumour has a tense, fleshy, and elastic feel. The orbit is completely filled by it; the orbitary margin is well defined, but the size of the orbit itself is considerably increased in the direction of both its perpendicular and horizontal diameters; indeed, the orbit is so much enlarged, that the portions of the malar and temporal bones, which form the external boundary of the orbit, bulge out so much as to produce quite an angular appearance of that side of the head and face. The tumour also seems to be slightly moveable in the orbit, but of this I am not entirely sure. I cannot discover any disease in the walls of the orbit besides the enlargement above mentioned, which has apparently been produced by the long-continued pressure of the morbid growth.

The disease resembles carcinoma in several respects. The patient's general health is impaired, and she is thin, and pale, and weak. The swelling also is painful, and located in a situation where most swellings of large size are at once strongly suspected to be cancerous; indeed, the disease had already been diagnosticated as carcinoma by more than one respectable medical man, and the case pronounced to be utterly hopeless. But the case presented other symptoms, which do not belong to carcinoma, and it was my appreciation of them which led me to a conclusion different from that arrived at by others who had seen the patient. It seemed to me that even the pallor and emaciation might be ascribed to the constant muco-purulent discharge from the conjunctiva, and to the severe neuralgic pain already mentioned, with fully as much propriety as to the constitutional infection of carcinoma; indeed, the patient's countenance, though pale, did not, as it appeared to me, present that peculiar hue and peculiar expression which are characteristic of the cancerous cachexy. Again, there was nothing about the pain characteristic of malignancy. No pain was occasioned by the tumour, until it became so large as to press upon the ophthalmic branches of the fifth pair that run along the walls of the orbit, and the larger the tumour became, and the greater its pressure upon these nerves, the severer became the pain. The pain did not seem to be in the tumour itself, so much as in the neighbouring parts, which were invaded mechanically by the morbid growth. Again, this tumour did not appear to affect the surrounding tissues, otherwise than by pressure. One of the most important characteristics of malignant disease is, as already stated, that it is prone to invade the surrounding tissues by infiltrating them with its own peculiar substance, and imposing upon them its own peculiar structure, thus contracting adhesions to surrounding parts, and, as it were, fusing them all together. The tumour under consideration has done nothing of the kind; for, notwithstanding its great size, even the skin covering it is healthy and non-adherent to it. Again, malignant disease about the eye, of long standing, is almost certain to infect the neighbouring lymphatic ganglia. In this case, these glands are not involved in any way whatever. And, finally, I believed the tumour to be non-malignant, from the length of time through which its

development extended, and the slowness of its growth—from 1851 to 1858, more than seven years. Objective symptoms showed that, if the disease were malignant, it must be that form known as encephaloid (it was too soft in feel for scirrhus), and encephaloid requiring more than seven years to run its course would be a wonder among surgeons. The statement made by the patient's mother, that no shining, metallic, or yellowish appearance was ever visible behind the pupil, is also of some value in negativing the supposition of ocular cancer.

The tumour was not developed from the eye itself, because that organ lay in front of and was distinctly moveable upon the tumour for a considerable space of time anterior to the attack of conjunctivitis in June, 1853. On this point, both the patient and her mother are positive. The tumour was not developed from the osseous wall of the orbit, because if such had been the case it would have protruded first on the side of the orbit to which it was attached, and it would also have pushed the eye partly in the direction of the opposite side of the orbit, whereas the tumour actually protruded centrally, and pushed the eye directly before it. The tumour did not involve the brain, because there was no symptom present denoting an organic lesion of that organ. The only cerebral symptom was partial deafness in the left ear, and that entirely lacked proportion to the extent and duration of the disease.

The conclusion appeared to me irresistible, that the protruding mass consisted of a *benign tumour*, which has pushed the eye before it; that said tumour was developed from some of the soft parts behind the eye, and was probably enclosed by the ocular fascia, and mature reflection made these conclusions settled convictions. I did not diagnosticate the tumour as neuroma of the optic nerve, before excising it; for I did not at that time know that neuroma ever attacked the optic nerve, or indeed any other nerve of special sense.

Early in August I expressed to my patient the belief that the disease was not a cancer, but a benign tumour, developed from the soft tissues behind the eye, and circumscribed by the ocular fascia, and that the extirpation of it, though a severe operation, and attended with great danger, afforded a reasonable prospect of ultimate recovery. The patient readily assented to my proposal to extirpate it; but as the weather was then hot, and malarious diseases (remittent and bilious-remittent fevers) were prevalent in her locality (Schuyler's Lake), I advised a postponement of the operation till the weather had become cooler, and the malaria had disappeared.

During the next two and a half months her sufferings increased; there was more of the feeling of distension in the orbit; the pain in her left forehead comes on oftener, was intenser, and lasted longer, producing great distress, and her general health failed considerably.

Operation.—On the 30th day of October, 1858, I proceeded to operate, assisted by Drs. Ollendorf, Patrick, Leaning, and Gleason. The patient was placed in the recumbent posture on a couch, the head being raised by means of pillows nearly to the height of an ordinary table. She was then brought fully under the influence of sulphuric ether, and complete anæsthesia was maintained throughout the operation. An incision was made through the skin and orbicularis muscle, from the external canthus, backward and a little upward, to the margin of the orbit. Another incision was made through the thickened mucous membrane, along the tarsal border of the upper eyelid, and close to it across the upper and anterior part of the tumour, from the inner to the outer canthus. The upper eyelid was next dissected off from the tumour, as far as the rim of the orbit, exposing here and there fibres of the orbicularis muscle, and then intrusted to an assistant, to be held out of the way during

the subsequent steps of the operation. At the rim of the orbit, the real difficulties of the operation commenced. The cavity of the orbit was so completely filled by the tumour, which, on account of its peculiar attachment, could not be drawn forward, that space could not at first be obtained wherein to detach the tumour in a proper manner. In doing this part of the operation I was desirous of using as little force as possible, for I did not know how much the orbital plate of the frontal bone might have been thinned and weakened by the long-continued pressure to which it had been subjected, and I was also anxious to do as little injury as possible to the supra- and infra-orbital nerves. Indeed, it was not till two cysts of considerable size, containing reddish-brown serum, had been evacuated that the requisite space was attained. (These cysts had occasioned the semi-fluctuation through the upper eyelid heretofore mentioned.) The tumour was then carefully detached from the roof or superior part of the orbit mainly with the handle of the scalpel, dividing here and there a fibrous band with the cutting edge. Then the tumour was drawn upward as far as possible; the thickened mucous membrane was divided along the tarsal border of the lower lid; that lid was dissected away, and the tumour was detached from the lower part of the orbit in the same manner as from the upper part thereof. Its remaining lateral attachments were also cleared. The tumour, hanging now only by what seemed to be its root, was drawn forcibly downward and forward, a curved scissors was carried behind it, the root was divided as far back as possible, and then the morbid mass came readily away. A sudden and copious gush of blood from the enlarged ophthalmic artery and vein immediately followed. The hæmorrhage was partially checked by the application of cold water, and pressure steadily continued for a few minutes. It was now seen that we had made a clean dissection of the orbit, leaving its cavity, apparently, covered only with periosteum, along which ran certain of the branches of the ophthalmic branch of the fifth pair of nerves, plainly in sight. The lachrymal gland was removed along with the morbid mass above mentioned. The stump formed by the divided ocular muscles being apparently too long, and fearing lest it might afford a nidus for the return of the disease, the curved scissors were again introduced, and it was divided still further back. Then followed a still more copious gush of blood; so great, indeed, as to threaten seriously the patient's life, she having already suffered much from the shock of the operation, together with the previous loss of blood, which had been considerable. Cold, and pressure made with the fingers, appearing to fail in stanching the hæmorrhage, the whole orbit was at once carefully filled with compressed sponge, a compress was placed on the outside of it, and a few turns of a roller were wound round the head to secure the whole against displacement. By this means the bleeding was immediately stopped. The patient was readily roused from the anæsthetic sleep by sprinkling her face with cold water.

She rallied slowly from the operation, and complete reaction was not established till late in the following night. But after this no dangerous symptoms supervened. From the risk of inflammation of the brain or its membranes, in addition to the hazards ordinarily attending capital operations, the antiphlogistic regimen was strictly enforced, and the most absolute quiet was enjoined on the patient. Suppuration was fully established on the fourth day. As no irritation or other difficulty was produced by the sponges, most of them remained in the wound till the sixth day; and the last piece, that is, the one in apposition with the ophthalmic artery and vein, was not removed till the end of two weeks. I hoped by this delay to lessen the risk of secondary hæmorrhage. To destroy the fetor occasioned by the sponge remaining in a suppurating wound, a weak solution of liqueur de Labarraque

was frequently applied by injection and otherwise. After suppuration was fully established, the patient was supported by tonics, of which the most useful was sulphate of quinine and sulphate of iron, and a diet nutritious and easy of digestion. She steadily improved, and in three weeks began to leave her room, and in six weeks to ride. The only difficulty in the after-treatment was occasioned by the sponges, small pieces of which adhered to the deeper parts of the wound, and subsequently, by their presence, produced irritation, exuberant granulations, and retarded the process of cicatrization. As often as these fungous granulations were observed, they were cut down with caustic, and the bit of sponge removed which had occasioned them. These troublesome pieces of sponge were several in number, and varied in size from a pin-head to a pea; and, what seemed to me very strange, the parts to which they adhered did not seem to possess the power to cast them off by the process of suppuration or ulceration. Sensation was impaired and even destroyed in a part of the left forehead, from unavoidable injury to some filaments of the supra-orbital nerve, but it was gradually restored again as the cure progressed. After a time the partial deafness in the left ear, already mentioned, also entirely disappeared. The bulging of the cheek occasioned by the enlargement of the orbit likewise slowly diminished. At the time of this writing, fourteen months and a half after the operation, she is in good health, the wound is entirely well, and there is no indication whatever of a return of the disease. The operation may be claimed as entirely successful, inasmuch as it has stood the test of time.

The *extirpated tumour-mass*, on a closer examination, is found to be covered externally by a smooth and shining capsule, formed from a condensed cellular tissue, through which certain of the ocular muscles and certain branches of the third pair of nerves are plainly seen. The ocular muscles themselves are elongated, thinned, and flattened, but not otherwise diseased. Within the ocular muscles, and embraced by them on every side, the true capsule of the tumour is found. It is formed by the expanded and thickened sheath of the optic nerve. That nerve enters the posterior end of the tumour near its centre, and, indeed, it seems to form the tumour by expanding suddenly, abruptly, and about equally in every direction. The neuroma itself, apart from all extraneous matter, is as large or larger than a goose-egg. On section it appears to consist of a laminate tissue (fibrous), whose colour is a reddish, lemon-yellow. The ruptured cysts, heretofore mentioned, are lined by a smooth membrane. In shape, the neuroma is oval, and somewhat elongated. From its distal end, the optic nerve springs out as abruptly as the stem from a water-melon. It then continues of uniform and normal size about one fourth of an inch to the eye, where it terminates. That organ is flaccid; the lens is absent (it had probably escaped when the cornea burst, and the humours were discharged in June, 1848), but its coats do not exhibit any evidences of disease other than the results of the inflammation which occurred at that time.

The optic nerve, at the point where it was divided behind the neuroma, is somewhat enlarged, and its tissue is tinged with a reddish and a yellowish hue; not to the same extent, however, as the neuroma. I regret exceedingly, that circumstances prevented a microscopical examination of the tumour.

ART. 109.—*On the surgical treatment of Short-sight.* By Mr. J. V. SOLOMON, Surgeon to the Birmingham Eye Infirmary.

(*Medical Times and Gazette*, June 2, 1860.)

Mr. Solomon appears to have hit upon an operation by which the focal range of short-sighted persons, whose corneæ are not conical, may be doubled in length. He has found the plan equally successful, whether the eyes are prominent or small, the aqueous chambers deep or shallow. He has tested the operation on cases varying from the age of twelve to forty-five years. A man of the latter age, who had worn double concave glasses of immense depth (No. 16) for a great number of years, and, unaided by lenses, could see with clearness the features of a person to know them at a distance of nine feet only, obtained at once by the operation an increase of seven feet in his focal range. In a child of twelve years of age, the operation increased the reading distance from four to eight inches, and the power of identifying persons' features from twenty to forty yards; and in one of sixteen years, the effect was still more remarkable.

These results have been obtained by dividing in a *transverse* direction some fibres of the muscle of the lens—the ciliary muscle. Mr. Solomon does not consider it material which part of the muscle is selected for division, but generally prefers either the upper or the lower part of the circle. Supposing the latter situation to be selected, and the patient to be seated in a chair, the operator stands behind, and fixes the globe with the left fingers, as in extraction, holding a cataract-knife in his right hand; with the flat of the blade directed *upwards*, he pushes the point in succession through the corneo-sclerotic union, the pillars of the iris, and the ciliary muscle. The direction given to the instrument is obliquely downwards and outwards. Care is taken that the incision in the muscle is of the same length as the puncture of entrance, namely, about two lines or two lines and a half in diameter. In some cases Mr. Solomon has found that the power of adapting the eye to distant objects has been increased by practice and lapse of time.

In a young man who had been myopic from his childhood, and had suffered for the last three years from congestion of the retina, the visual power and focus have been so much increased that the outlines of large buildings at a distance of a mile and a half can now (six weeks after operation) be distinctly made out; whereas, before the ciliary muscles were divided. they appeared as mist.

ART. 110.—*On an Ulcer of a peculiar character which attacks the Eyelids and other parts of the Face.* By Dr. JACOB.

(*Dublin Hospital Reports*, vol. iv, 1827; and *British Amer. Journal*, Oct., 1860.)

The remarks following are those which, upwards of thirty years ago, appear to have first directed attention to the affection now known as "rodent ulcer." They will be read with interest now that attention has been again prominently drawn to the disease by Mr.

Hutchinson and others. A doubt is expressed by Dr. Jacob whether, strictly speaking, ulceration is the primary disease, and a suggestion is made to the effect that the ulceration is a secondary process, belonging to a tubercle of peculiar specific character, and that the aim of the surgeon should be to detect this tubercle before it ulcerates.

"Attempts to establish the specific character of a particular disease, however fruitless they may prove, are attended with the advantage of promoting accuracy of observation and exciting minute inquiry. With the hope that such may, in some degree, be the case in the present instance, with respect to the obscure subject of tumours and ulcers, I am induced to call the attention of surgeons to a disease, which, although probably observed by many, has never, I believe, been accurately described. I allude to a destructive ulceration of peculiar character, which I have observed to attack and destroy the eyelids, and extend to the eyeball, orbit, and face. The characteristic features of it are the extraordinary slowness of its progress, the peculiar condition of the edges and surface of the ulcer, the comparatively inconsiderable suffering produced by it, its incurable nature unless by extirpation, and its not contaminating the neighbouring lymphatic glands. The slowness with which this disease proceeds is very remarkable; of three cases which have come under my observation one had existed for four years, and now presents no remarkable difference when compared with a drawing which was executed six months ago; the eyeball, exposed and dissected out as it has been by the ulceration, remains precisely in the same state, and the edges occupy the same situation as at that period. In another case, now also under my observation, the patient, an unmarried woman, aged fifty-five, states that the disease has existed for twenty-three years without having even healed; her eyeball also has been exposed by the ulceration for nearly a year, and has not yet been totally destroyed. In the third case, that of a gentleman about sixty years of age, the disease existed for about nine years previous to his death, which took place from a different cause.

"The sufferings of persons labouring under this disease do not appear to be very acute; there is no lancinating pain, and the principal distress appears to arise from the exposure by ulceration, of nerves or other highly sensitive parts. In the examples which I have met, the disease at the worst period did not incapacitate the patients from following their usual occupations. The gentleman to whom I have alluded was cheerful, and enjoyed the comforts of social life after the disease had made the most deplorable ravages.

"In two of those three cases I have been unable to ascertain with certainty the nature of the disease at its commencement; whether the ulceration was preceded by tubercle, encysted tumour, or wart. The account given by the patient from whom the drawing has been made, a poor woman aged fifty, is that it arose from a blow, and commenced on the temple at a short distance from the external angle of the eye. The other woman, whose disease has existed for twenty-three years, says, that it was preceded by 'a kernel under the skin over the eyebrow, which was not rough like a wart, and which existed for two or three years before it came to a head, when she picked it, after which

it never healed.' I quote her own words: it was probably an encysted tumour. In the gentleman's case, the disease commenced in an old cicatrix, the consequence of confluent smallpox; it was at the inner angle of the eye, and consequently moistened by the tears, which could not escape into the nose, the *puncta* being closed.

"This disease may be observed under two very different conditions, either in a state of ulceration or in a fixed state, in which no progress is made towards healing. In this latter condition the parts present the following appearances: the edges are elevated, smooth and glossy, with a serpentine outline, and are occasionally formed into a range of small tubercles or elevations; the skin in the vicinity is not thickened or discoloured. The part within the edges is, in some places, a perfectly smooth, vascular, secreting surface, having veins of considerable size ramifying over it, which veins occasionally give way, causing slight hæmorrhage; in other places the surface appears covered by florid, healthy looking granulations, firm in texture, and remaining unchanged in size and form for a great length of time. The surface sometimes even heals over in patches, which are hard, smooth, and marked with the venous ramifications to which I have alluded. This healing may take place on any part of the surface, whatever may be the original structure. In the case from which I had this drawing, the eyeball itself, denuded as it is by ulceration, is partially cicatrized over. When the ulceration commences, it proceeds slowly, cutting away all parts indiscriminately which may be in the direction in which it spreads; the surface in this state is not so florid, and presents none of the glistening or granulated appearance above noticed; the pain is generally greater at this period. It appears, also, that there is a tendency to reparation, exclusive of the cicatrization which I have mentioned; there is a deposition of new material, a filling up in certain places, which gives a uniformity to the surface, which should otherwise be very irregular, from the nature of the parts destroyed. When the disease extends to the bones, they sometimes exfoliate in scales of small size, but more generally they are destroyed, as the soft parts, by an ulcerative process. The discharge from the surface is not of the description called by surgeons unhealthy and sanious, but yellow, and of proper consistence, neither is there more fetor than from the healthiest sore, if the parts be kept perfectly clean and be dressed frequently. There is no fungous growth, nor indeed any elevation, except at the edges, as already noticed, and even this is sometimes very inconsiderable. There is no considerable bleeding from the surface, and when it does occur it arises from the superficial veins giving way, and not from sloughing or ulceration opening vessels; sometimes the surface assumes a dark, gangrenous appearance, which I have found to arise from the effusion of blood beneath. I have not observed that the lymphatic glands were in the slightest degree contaminated, the disease being altogether extended by ulceration from the point whence it commences.

"After the preceding description, it is scarcely necessary to state additional arguments to prove that the disease is peculiar in its nature, and not to be confounded with genuine *carcinoma*, or with the disease called *lupus* or *noli me tangere*. From the former it is distinguished

by the absence of lancinating pain, fungous growth, fetor, slough, hæmorrhage, or contamination of lymphatics; from the latter by the absence of the furfuraceous scabs and inflamed margins, as well as by the general appearance of the ulcer, its progress and history. It is equally distinct from the ulcer with cauliflower-like, fungous growth, which occasionally attacks old cicatrices.

"It remains to be determined whether the disease can be removed by any other means than the knife or powerful escharotics; and from the experience I have had in those cases, I am inclined to conclude that it bids defiance to all remedies short of extirpation. I have tried internally alterative mercurials, antimony, sarsaparilla, acids, cicuta, arsenic, iron, and other remedies, and locally, simple and compound poultices, ointments, and washes containing mercury, lead, zinc, copper, arsenic, sulphur, tar, cicuta, opium, belladonna, nitrate of silver, and acids, without arresting for a moment the progress of the disease. I have indeed observed that one of those cases which is completely neglected, and left without any other dressing than a piece of rag, is slower in its progress than another which has all the resources of surgery exhausted upon it. The success even of powerful escharotics is doubtful. Mary Sherlock, the old woman who has laboured under the disease for twenty-three years, and who is now in the Incurable Hospital, says that 'a burning cancer plaster' was applied several times seventeen years ago, and she has lately had the arsenical composition, called Plunket's Powder, applied without any good effect. The gentleman to whose case I have alluded had the sore healed, when it was very small, by the free application of lunar caustic, under the care of Mr. Travers; it, however, broke out again, and spread without interruption, until it destroyed the lids of the globe of the eye, under which circumstances he, in despair, submitted himself to a popular charlatan, who, bold and fearless from ignorance, gave a full trial to escharotics; he repeatedly applied what I understood to have been a solution of muriate of mercury in strong nitric acid, and in a short time excavated a hideous cavern, extending from the orbital plate of the frontal bone above to the floor of the maxillary sinus below, and from the ear on the outside to the septum narium within; yet the unfortunate gentleman survived, but the disease preserved in every respect its original character. Mr. Colles, however, tells me, that in a case which came under his care, before the disease had extended to the lids, he succeeded in establishing a permanent cure by the application of a powerful escharotic, covering up the eye during the operation of the remedy with gold-beater's leaf.

"Such is the information which I have to communicate respecting this malady. I offer it with the hope that surgeons who have met with similar examples may be induced to give the result of their experience respecting it. Sufficient has, however, been ascertained to prove that, when the disease exists in a situation which admits of it, the sooner it is completely extirpated by the knife, or the actual or potential cautery, the better chance is afforded the patient of relief from a most distressing and fatal malady."

ART. 111.—*A clinical report on Rodent Ulcer.* By Mr. JONATHAN HUTCHINSON, Assistant-Surgeon to the London Hospital, &c.

(*Medical Times and Gazette*, Sept. 29, 1860.)

The chief points in this report (which relates to forty-two cases) are summed up in the following aphorisms:

1. That there occurs not infrequently on one or other part of the face a form of ulceration which is characterised by an indurated edge, and by a tendency to spread to adjacent structures, without regard to difference of tissue; which is very slow in its progress; does not cause much pain; does not induce cachexia, and is never followed by enlarged glands or deposits in the viscera.*

2. Sections of the indurated edge of this ulcer (or of the portions of new growth which are sometimes produced about it) do not exhibit the cell-structures met with in epithelial or scirrhous cancer, but only those of organizing fibrous tissue.

3. This ulcer differs from lupus exedens in that it never occurs in the young, and never gets well spontaneously, while lupus exedens but rarely begins after the age of thirty, and usually tends, after the lapse of time, to cicatrize spontaneously. The two, also, further differ, in that lupus has a tuberculated, inflamed border, without any great degree of induration; while the edge of the ulcer in question presents an extremely indurated ridge, without tubercles, and comparatively free from inflammatory congestion.

4. The ulcer in question differs from cancer in that there is but seldom present any tendency to the production of new material, that it never causes the glands to enlarge, nor induces morbid growths in the internal viscera.

5. Although it must be freely admitted that this disease is closely allied to cancer, and that in its inveteracy under treatment, and its tendency, if not removed, to spread deeply and extensively, it well deserves the designation of "locally malignant," yet it is inconvenient in practice to call it "cancer of the skin," since there are other forms of cutaneous cancer (the epithelial, scirrhous, melanotic, &c.) essentially different from it, and of a far higher degree of malignancy.

6. The term "a peculiar ulcer occurring in the eyelids," is too vague, and also involves an erroneous statement as to uniformity of location, an objection which, also, in addition to what has been stated

* In making this assertion I am borne out by all the facts hitherto recorded. Fully acknowledging, however, the near relationship of rodent ulcer to cancer, I have but little doubt that it will now and then so far deviate from its usual course so as to affect the glands, and quite anticipate in the future to hear of such a case. Epithelial cancer may be said to almost never affect the internal organs, yet a few cases are on record in which it has done so. Such exceptions, however, only prove the general rule; and just as the epithelial cancer very exceptionally affects the viscera, so will rodent very exceptionally affect the lymphatics. Professor Langenbeck has mentioned to me a case in which he excised a rodent ulcer from the side of a woman's nose, who afterwards remained well for nine years, and was then attacked by cancer of the uterus, followed by secondary growths and death. Such a fact is, however, very different from one in which the cancerous infection should advance, as in other malignant disease, through the lymphatic system, from the original ulcer.

above, applies to "cancer of the eyelids," since this ulcer is met with on many other parts besides the palpebræ.

7. To the designation of rodent ulcer given to this disease by Lebert, and adopted in this country by Paget (see 'Lectures on Surgical Pathology'), no objection applies, excepting that it is more vague than desirable. Of those in use it is certainly the best, and should the disease become generally recognised by the profession under that name, the vagueness of its meaning will by custom soon cease.

8. The rodent ulcer is most commonly met with between the ages of fifty and sixty, and is equally frequent in the two sexes.

9. It occurs but very rarely on any other region than the integument of the face, and is most common in the eyelids.

10. It is a singular and very significant fact that no case has yet been recorded in which the rodent ulcer attacked the lower lip, either primarily or by extension, while that part is well known to be a very frequent seat of epithelial cancer.

11. The *diagnosis* of rodent ulcer is usually easy. An ulcer with a hard sinuous edge, situated on some part of the skin of the upper two thirds of the face, of several, or perhaps many years' duration, almost painless, and occurring in a middle-aged or elderly person, of fair health, and without enlarged glands—such a sore is almost certain to be of the rodent type.

12. The *prognosis* of rodent ulcer varies with the stage of the disease and the treatment it is intended to pursue. If left to itself it will slowly but surely advance both in extent and depth, and will probably destroy the patient's life in the course of from ten to twenty-five years, death being eventually produced by the exhaustion consequent on suppuration, hæmorrhage, pain, &c., and very probably aggravated by inability to take sufficient food, owing to the diseased state of the mouth. If the case be seen in an early stage, while complete removal either by knife or escharotics is practicable, a favorable opinion may be given as to the probable non-return of the disease. The younger the patient the more rapid will be the course of the disease, and *vice versâ*; and the younger the patient the more nearly is the disease allied to cancer, and the more likely to recur after removal.

13. The only *treatment* which the rodent ulcer admits of is local, and the best is that which obtains its freest removal with the least injury to the parts concerned. In some localities, and in some stages, escharotics, such as the chloride of zinc, may be advisable, but in most excision and transplantation of skin is the more certain and satisfactory.

14. A widely diffused knowledge of the true pathology of rodent ulcer may be expected to result in considerable advantage to the sufferers from that disease, since it will encourage to the early and free adoption of local measures, and to the employment of excision and transplantation even in some cases which, if considered cancerous, would certainly be beyond relief by surgical art.

ART. 112.—*A new operation for the cure of Tic Douloureux of the Face.* By Dr. J. M. CARNOCHAN, Professor of Surgery in the New York Medical College.

(*Amer. Med. Monthly*, Feb., 1860; *North Amer. Med.-Chir. Rev.*, May, 1860.)

In this paper, presented to the Medico-Chirurgical College of New York, Professor Carnochan gives his views of the seat, pathology, and treatment of neuralgia of the face, and describes his new operation for removing the superior maxillary division of the fifth pair of nerves as far as the foramen rotundum of the sphenoid bone; his previous operation consisting in the removal of Meckel's ganglion and the trunk of the nerve beyond it.

Considering the true seat of the disease to be in the whole or some part of the trunk of the nerve in front of the ganglion of Gasser, the author proposes to relieve it by exsecting the nerve on the cerebral side of Meckel's ganglion. For this purpose an incision is commenced upon the middle of the zygomatic arch, opposite the spheno-maxillary fossa, and carried forward and slightly downward to a point a little below the infra-orbital foramen, and it is further extended so as to divide entirely the tissues of the cheek and lip midway between the median line and the commissure of the mouth. The flap is now dissected from the malar and upper jaw bones, and the nerve is to be sought for as it emerges from below the orbit; and being found and isolated, the foramen and lower border of the orbit are completely exposed. A small trephine is then applied just below the foramen, and a portion of the anterior wall of the antrum is removed with the lower part of the malar and the outer portion of the superior maxilla connected with it. The cavity of the antrum being now fully exposed by removing its outer wall, the nerve is detached from before backward by breaking down the wall of the infra-orbital canal, care being taken to avoid injury to the soft parts of the orbit. The next step consists in removing the portion of the nerve running through the spheno-maxillary fossa and with it the spheno-palatine ganglion. The lower jaw must be held firmly and depressed, and the tissues upon the posterior wall of the antrum being pushed backward, the fossa containing the nerve and internal maxillary artery is brought into view. Avoiding the latter, the nerve is pulled downward and isolated from the other tissues, and the foramen rotundum is to be ascertained by tracing with the finger the anterior border of the external pterygoid plate upward to its junction with the angle formed by the body and great wing of the sphenoid bone, and passing inward from the upper part of this angle for about two lines. With a blunt hook the nerve is still further detached where it emerges from the foramen, and gentle traction being made on it, it is severed at the base of the skull. The ganglion of Meckel can now be removed.

This paper is illustrated by the case of the man Forbes, who in the course of seven years and a half was the subject of thirteen operations for a very aggravated form of neuralgia. In October, 1857, Dr. Carnochan removed a part of the second branch of the fifth pair, and with it the spheno-palatine ganglion, an operation which relieved the

patient for twelve months. In June, 1859, the patient again requested an operation, when the same external incisions were made as above described, the remaining portion of the nerve was found and divided at its point of emergence from the foramen rotundum. The result has been satisfactory up to the time of the report, about seven months after the operation.

The views of the author in relation to severe facial neuralgia are contained in the following propositions:

1. That the second branch of the fifth pair extending from the ganglion of Gasser to the infra-orbital foramen, has two peripheries; one formed by the terminal branches of the trunk, given off along its course, to the superficial parts of the face; the other, by the terminal branches emanating from the ganglion of Meckel.

2. That in cases of severe *tic douloureux* (the *dolor crucians faciei* of Fothergill) the seat of the disease is in a portion of the trunk of the nerve, or in the entire trunk, between the ganglion of Gasser and the foramen infra-orbitale, including that part embraced by the foramen.

3. That the trunk of the nerve being injured or diseased, pain is felt at its periphery, as well as in the part morbidly affected.

4. That impressions, acting upon the periphery of the nervous trunk will be reflected upon the trunk, and give rise to paroxysms of neuralgic pain.

5. That the ganglion of Gasser, or the *common trunk* of the fifth pair, cannot be the seat of the disease, because experiments upon living animals, and pathological facts derived from post-mortem examination, demonstrate that when this ganglion and the trunk of the fifth pair are destroyed or injured, the eye of the corresponding side becomes destroyed from defective nutrition, and also that the other organs of special sense manifest symptoms of functional disorder.

6. That the encephalic strands of the fifth pair, on the cerebral side of the *common trunk*, cannot be the seat of the disease; as in such condition of the brain there would be symptoms denoting cerebral disturbance or disease, which never exist in tic douloureux.

7. That division of the nerve externally to the infra-orbital foramen, or anterior to the diseased portion of the trunk, will not effect a cure; because the point of disease being still left, the morbid sensibility is referred to the locality of the periphery, although that has been removed or insulated.

8. That when only a portion of the trunk of the nerve is removed, anterior to the ganglion of Meckel, the remaining portion may become affected with the disease, and the symptoms be renewed with the same severity as before the operation.

9. That the only operation which will cure the disease is the excision of the nerve on the cerebral side of the ganglion of Meckel; because, first, the diseased part will thus be removed; second, because the two peripheries of the nerve must thus be insulated from the encephalon; third, because the influence of the ganglion of Meckel, in supplying morbid nervous sensibility, is destroyed; fourth, because the sensibility of the two peripheries of the nerve is obliterated, and consequently external impressions cannot be reflected or transmitted.

10. That there is a possibility of [illegible] even after the cessation of the [illegible] from disease attacking the [illegible] front of the ganglion of Gasser, [illegible] from asthenia and [illegible] referred, as already explained, to the [illegible]

11. That in such a case, however, the [illegible] diseased or compressed by the [illegible] tundum, would be found under circumstances tending to atrophy or resolution; and that the disease, resulting for a time from such causes, would eventually subside.

12. That the three remote of the fifth or trifacial nerve emanating from the ganglion of Gasser, and supplying in their aggregate the general sensibility to the face, when affected by neuralgia, are to be subjected alike to the same rules in regard to the etiology, pathology, and treatment.

ART. 113.—*On necrosis of the cartilage of the Septum Narium in Fever.* By Dr. Isidore Kapeteau, to the Children's Hospital at Paris.

[illegible]

The author, in this paper, contributes two very rare, if not unique, cases of necrosis of the cartilages of the nose, supervening during the persistence of a general febrile affection, and terminating in perforation of the septum. The first occurred towards the termination of rheumatic fever; the second during the convalescence from typhoid fever.

The first case occurred in a young man, aged eighteen, who, after four previous attacks of rheumatic fever, complicated with endocarditis and pleurisy, was seized a fifth time, and after about six weeks' illness, exhibited to Dr. Roger a piece of cartilage of the size of a grain of rice, which he had removed from the septum narium. A complete perforation had been established, the only inconvenience resulting from which was a slightly nasal tone of voice. Death ensued two months later from the disease of the heart. No scrofulous or syphilitic diathesis was discoverable in this patient, and the author suggests the lesion may be due to the rheumatic affection alone, though he does not positively affirm it.

The second case occurred in a young man of nineteen years, labouring under typhoid fever. When Dr. Rogers saw him in consultation, he had been ill for five weeks. He observed a slight nasal twang in his voice, and it proved that a short time previously the patient had noticed a perforation in his septum narium, which allowed two fingers introduced on separate sides to meet; the orifice was about the size of a sixpence. The nasal tone subsequently diminished.

The author regards this case as analogous to what Rokitansky terms secondary laryngo-typhus, and quotes Sestier, who has brought together twelve cases of necrosis of the larynx occurring in the sequel

of typhoid fever. Sestier has not, however, noticed the occurrence of the lesion of the septum narium described above. It appears that the whole nose is sometimes found to become gangrenous in typhoid fever, and Mauthner is referred to as having frequently noticed a gangrenous affection of the nose during a typhus epidemic in Gallicia.

ART. 114.—*Case of Acute Caries of the walls of the Tympanic cavity, producing ulceration of the internal carotid artery.* By Mr. TOYNBEE, Aural Surgeon to St. Mary's Hospital.

(*Proceedings of Royal Med. and Chir. Soc.*, June 26, 1860.)

Only one case of this kind appears to be on record. The case itself is as follows:

CASE.—W. C—, æt. 46, a jobbing builder, was admitted, under Mr. Toynbee's care, at St. Mary's Hospital, as an out-patient, on the 18th of August, 1859. He was sallow and thin, and evidently out of health. Two years previously he had received a violent blow on the head above the left ear. Three months before his admission at the hospital, during a violent fit of coughing, he was seized with intense pain in the left ear, which became constant; this pain was followed by discharge, which was also constant. In spite of all treatment the pain and discharge continued, and on the 16th of January blood of a bright-red colour came from the ear, and continued to do so at intervals until the 27th of January, when the patient died.

Upon a post-mortem inspection, the upper and anterior osseous walls of the tympanum were found to be carious, and there was a large aperture communicating with the cavity of the canalis caroticus. A small ulcerated opening was found in the internal carotid artery, through which the hæmorrhage had taken place.

ART. 115.—*Case of Congenital Fissure of the Palate cured by reiterated cauterization.* By M. BENOIT, Professor of the Faculty of Medicine at Montpellier.

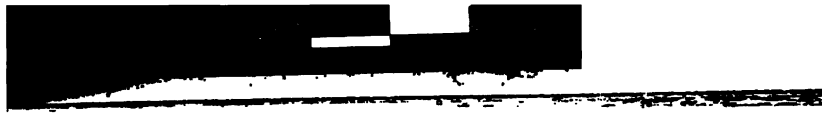
(*Journ. of Pract. Med. and Surg.*, Aug., 1860.)

The following case was recently brought before the Parisian Academy of Sciences by Professor J. Cloquet.

CASE.—The deformity under consideration, which implicated the soft palate only, was attended with all the symptoms it is capable of producing. Merely a few words could be pronounced, and these so disfigured that even the child's parents were unable to understand them; deglutition was impeded, solid and more especially liquid substances returning through the nose; expuition was utterly impossible, the saliva or mucous secretions involuntarily dropping from the mouth, or being expelled by automatic movements of the tongue. The poor child had attained his eleventh year, and time had in nowise ameliorated his condition when M. Benoit undertook the case.

The treatment was begun on the 8th of May, 1857, and was twice interrupted, once by a journey, and on another occasion by the measles; the time thus lost being deducted, the cure occupied nineteen months.

The soft palate has now entirely united, the uvula only remaining bifur-



cated. The [illegible] have disappeared [illegible] easy, but the voice [illegible] somewhat [illegible] little through the nose, a circumstance referred [illegible] than to the insignificant fissure which remains [illegible] sertion by adducing the case, still under [illegible] congenital division of the uvula. [illegible] patient whose history has been related [illegible] of words is perfectly natural. [illegible] remark in one of the cases [illegible]

In M. Benoit's patient [illegible] cauterizations, fourteen [illegible] mercury, and nineteen with [illegible] Cloquet's precept, [illegible] two lines only. The [illegible] indifferent to [illegible] M. Benoit therefore [illegible] tertains no doubt [illegible]

This is, therefore [illegible] cauterization. [illegible] for several [illegible] and interfere [illegible] hitherto [illegible] during [illegible] cess. That [illegible] where [illegible] fellows, [illegible] for [illegible] permanent [illegible] vious [illegible]

[illegible]

and a half years of age, to wear tight shoes and to walk with perfect ease.

Upwards of thirty years since, by the same procedure, M. Cloquet succeeded in effecting the union, in the case of a young man, of the two halves of a congenital bifid thumb (two small phalanges existed, each provided with a narrow but distinct nail). A deep, longitudinal furrow persisted at the junction of the two nails, which, instead of being divergent, became parallel to each other, and the thumb, thus nearly restored to its natural shape, recovered the regularity of its functions.

ART. 116.—*A new method of operating for Hare-lip.* By Mr. EDWARD WOAKES, jun.

(*British Med. Journal*, Sept. 1, 1860.)

The inefficiency of the ordinary operation for hare-lip to meet the requirements of the case, and the inconveniences attendant upon its employment—such for instance, as the ulceration set up by the pins, which have in consequence to be withdrawn before union is established; the frequent need for additional support to keep the edges of the wound together; and the impossibility of nicely adjusting these edges so as to secure a very slight amount of scar, when the silk is twisted over them—point alike to the necessity for some improvement in the operation.

The following plan has arisen out of a consideration of the desiderata which a successful operation for hare-lip demands. Briefly stated, these are—1, to support the opposed surfaces of the wound so thoroughly that any amount of contortion on the part of the patient will not interfere with the adhesive process; and 2, to secure so accurate an adjustment of the skin, that when the cure is completed there shall remain a minimum amount of cicatrix.

In the operation now proposed, these objects are accomplished in a very simple manner, by substituting silver wires and splints for the steel pins and silk in ordinary use. Thus, to the operation in question is applied the contrivance for procuring union, which has proved so eminently successful in vesico-vaginal fistulæ. The wires being introduced (two suffice, one near the free margin of the lip, and one about midway between the commencement and termination of the cleft), small splints, perforated with holes, corresponding to the size of the wires, are slipped along their projecting ends and carried home to the lip at the spot where the wires were inserted. The ends of the two wires on each side are now twisted outside the splint, which thus serves as a *point d'appui*, from which, at every additional twist, the approximation of the edges of the wound is made more perfect. The chief point to be observed is to insert the wire sufficiently far back to form a firm support to the wound; and this can be done far more safely with metallic wire than with steel pins, as the former, by adapting itself to the shape of the mouth, causes no painful tension, as do the pins when very deeply inserted. At the same time, so effectual is the support afforded by traction on the splints, that no

additional aid or this purpose, such as adhesive straps, spring-trusses, &c., is requisite, even in the most formidable cases. By this immunity from tension, the tissues are enabled to display their well-known tolerance of metallic substances, in consequence of which the wires may be retained for an almost indefinite period; whereas, from the oftentimes early commencement of ulceration when the less yielding pins are employed, these may have to be removed before the union is complete.

The cut surfaces having been approximated as closely as may be considered advisable by twisting the wires, the line of incision remains still uncovered; and the second condition of the operation may now be accomplished by the insertion of three or more delicate silk sutures very superficially. By this means the most perfect apposition of the edges is obtained, and in consequence, as regards the final result, a very slight scar—in some cases all but imperceptible—remains. These sutures should be removed within twenty-four hours.

The following case is given in illustration.

Case.—W. M—, æt. eighteen months, was the subject of congenital hare-lip; the cleft, which extended to just within the nasal orifice, being to the left of the median line. The usual incisions having been made while under chloroform, the wires were introduced about two thirds of an inch from the line of incision, and made to pass out at a similar distance on the opposite side. This was done by attaching each wire to a piece of silk connected with a straight needle sufficiently large to admit of the silk, with the wire attached, being drawn through after it. (This mode of introducing metallic wire answers perfectly well when the hollow needle for the purpose is not at hand, care being taken that, where the wire is bent down for the attachment of the silk, it is squeezed together with pincers, that it may present as small an obstacle as possible to the passage of the wire at this, its bulkiest part.) The ends of the wires to which the silk was united were then removed with scissors, and a splint passed along them, a twist being given to secure it. The other two were then similarly treated; and by alternately twisting the wires of opposite sides with a pair of ordinary pincers, the splints were first brought to lie upon the cheek, and then to approximate the edges of the wound. Three superficial sutures were now introduced, and the integument thus accurately adjusted. Adhesion took place rapidly, and in the course of twenty-four hours one of the superficial sutures was removed. The child, which had not been weaned, sucked well, and appeared perfectly free from pain or uneasiness.

The following day, the other superficial sutures were taken away.

On the fifth day union appeared perfect, and the apparatus was removed; by snipping the wires of one side, and taking off the splint, that of the other with the wires attached was readily withdrawn.

The results of this and subsequent cases, as seen some months after the operation—the traces of the original deformity being less than in the most successful instances of the ordinary mode of operating—claim for it the attention of those who are interested in plastic surgery.

Art. 117.—*On Tracheotomy.* By Dr. Wilks, Assistant-Physician to Guy's Hospital, &c.

(*Guy's Hospital Reports*, Third Series, vol. vi, 1860.)

"We do not intend," says Dr. Wilks in a valuable essay, 'On some Diseases of Children,' "to refer to this subject in connection with the treatment of croup, since we have not sufficient data from which to form an opinion, but rather to allude to some points which bear on the operation generally. We think there is an advantage in this, for the operation may be regarded in different aspects when had recourse to in different diseases; thus, for example, in croup the simple effects of the operation cannot be distinguished from the effects of the disease, and the former may be attributed to the latter, and thus no heed taken at all of the hazard attending the opening of the trachea. It is to this point we especially wish to draw attention, as it seems to be altogether passed unnoticed by the writers on croup, our own opinion being that tracheotomy is an operation attended with a considerable amount of danger, and therefore not to be lightly spoken of as a simple expedient of opening the trachea for the purpose of making a new passage for the air. Of course we have nothing to urge against its adoption when considered necessary, but have much to say in opposition to the opinion that tracheotomy can do no harm, and that the operation is a harmless one. We believe it to be one of considerable hazard, and not to be put in practice without deliberate reason for its necessity. Such a conclusion can scarcely be arrived at by the consideration of cases of croup only, but rather from the effects produced on the healthy trachea. In cases also of laryngitis or œdema glottidis, produced by swallowing boiling water, where the operation has been performed and considerable inflammation has been found, it would also be difficult to draw an inference as to the proportional influence of each cause; but where, from a local and chronic disease of the larynx, an acute inflammation has followed tracheotomy, there can be no hesitation in attributing this to the operation. So, also, in cases where a foreign body has been so speedily ejected after the operation as not to have allowed time to produce any injurious effect, but yet death has resulted from tracheitis succeeding the opening of the tube. We might also allude to cases of cut throat, where it is not unusual for the immediate cause of death to be due to acute inflammation of the air-tubes. In considering this subject, we have been much pleased in reading a paper by Dr. Bevan, in the 'Dublin Quarterly Journal,' on the treatment of scalds by boiling water, and the great success of antimonial medicines, and with the same view we have heard advocated the operation of puncturing the swollen glottis. Any or all of such means, we feel sure, should be adopted before tracheotomy is had recourse to; but without speaking of treatment, we would wish to confine attention to this simple point —the danger attending tracheotomy, and we do so because we have often put the question to surgeons regarding it, and have most frequently received the answer that it is an operation attended with no

danger. We think that it has been too much the rule to consider it in this light, but for our own part we are not surprised at the fearful mortality which attends the operation in children, when had recourse to for such accidents as we have named. Death generally occurs a few days afterwards, from inflammation of the air-passages, and this can occasion no surprise when we consider that, in addition to the cause which has necessitated the operation, the latter comes in to increase the irritation; thirdly, the cold air taken in through the artificial opening tends to further excite the mucous membrane, and then, as is often the case, chloroform is administered. This may possibly act as a fourth source of irritation. There can be no wonder, then, in the contemplation of the result, that out of fourteen cases published in the 'Medical Times' only three recovered.

"We believe there is another source of danger in tracheotomy, but as we have never seen this alluded to by authors, we would speak of it with some hesitation, from our small data. We refer to pneumothorax arising from the escape of air from the mediastinum having been drawn into the chest from the neck. That air may be drawn in around the wound is clear, from the cases of general emphysema arising therefrom, which we shall presently relate."

The cases referred to are as follows:

Case 55.—A girl, æt. 11 months, was suddenly choked while drinking some broth. She was brought to the hospital, having considerable dyspnœa, and with a crowing sound, indicating laryngeal obstruction. The trachea was opened, with immediate relief to the patient. After four hours, however, the breathing became more difficult and rapid, and the child quickly died. On *post-mortem examination*, a piece of bone was found sticking fast in the rima glottidis, the opening below being quite free; the bronchial tubes were healthy, the lungs collapsed. In the anterior mediastinum, emphysema existed to a great extent, being full of bubbles of air, and the thymus surrounded with air in the same manner. It was not proved that any of these air-vesicles had burst into the chest.

Case 56.—A girl, æt. 3, admitted into the hospital for a piece of nutshell in the trachea, and which was producing alarming symptoms of suffocation. Tracheotomy was performed, in the hope that the foreign body would be coughed up; this, however, was not the case, but shortly the breathing became difficult, and the child died in a few hours. *Post-mortem examination*:—The piece of nutshell was found sticking in the rima glottidis. The mucous membrane of the whole of the air-passages was inflamed, and covered with secretion. The left lung was collapsed, the right adherent from old disease. The cellular tissue in the mediastinum was full of air, from emphysema. Some of the bullæ of air were very large, and a slight pressure enabled the finger to burst them into the chest.

Case 57.—A woman, æt. 33, was admitted under our care for chronic laryngitis, probably of a syphilitic character. At night she appeared to be dying from obstruction, and tracheotomy was therefore performed. A general emphysema immediately ensued, and rapidly spread over the whole body; the neck, chest, and arms being immensely distended. On the following day she died, the dyspnœa being still very great. The *post-mortem examination* showed the glottis quite closed by a tough fibrous deposit in its tissue. The operation was perfect: there was a slight scratch on the mucous membrane opposite to the entrance of the trocar, but no passage through

which air could have entered; indeed, no way into the cellular tissue, except by the side of the canula. Both lungs collapsed against spine, and airless; the cellular tissue both of anterior and posterior mediastinum was highly emphysematous. Cervical glands slightly enlarged. Fibroid deposits in the liver.

ART. 118.—*Case in which a Needle which had penetrated the Neck was extracted from the Pharynx.* By Mr. J. JARDINE MURRAY.

(*Edin. Med. Journal*, Feb., 1859.)

CASE.—On the evening of the 6th of December, 1858, my colleague, Mr. Dewar, requested me to see with him a woman who had been conducted by her friends to the waiting-room of the surgical hospital. It was stated that a sewing-needle had been thrust into the patient's neck, whence it had not been removed. As she was considerably intoxicated, there was much difficulty in collecting from her rambling statements an intelligible account of the circumstances in which the accident had occurred; but I have since ascertained the following facts:

Margaret B—, æt. 44, having been drinking, quarrelled with her husband, who was also intoxicated. In a scuffle which ensued, he roughly seized her by the throat and pushed her from him; and this push caused a needle, which had been used to fasten the woman's shawl, to penetrate the skin of the neck. The entrance of the needle caused acute pain, and she screamed loudly for assistance. A neighbour entered the room, and, on uncovering the neck, found that the needle was so far embedded in the tissues that only its eye could be seen projecting through the skin. Her friends having been unsuccessful in their endeavours to extract the foreign body, she came to the hospital about half an hour after the accident had occurred.

On examining the skin of the neck, the point at which the needle had entered was found to be distinctly indicated by a dark spot, situated on a level with the space between the lower margin of the cricoid cartilage and the first ring of the trachea, and about three quarters of an inch to the right side of the mesial line. This spot was surrounded by slight redness and swelling, and exhibited tenderness on pressure.

The patient talked incessantly in a drunken, maudlin manner, and often complained loudly of lancinating pain in the region of the neck; but when requested to indicate the exact locality in which the pain was felt, she seemed quite unable to do so.

Relaxing the muscles by position, we carefully examined every portion of the neck by palpitation, but no indication of the presence of the foreign body could be detected. The trachea and chest were carefully examined by the stethoscope, and the respiratory sounds were ascertained to be quite normal.

On the whole, then, we were disposed to believe that the case formed one of that numerous class in which the sensation remains after the foreign body has been removed. The woman was therefore recommended to return home for the night, and to revisit the hospital on the following morning. Previous to her dismissal, however, the forefinger was passed far down into the pharynx, and on the left side of the lower portion of its anterior wall, both Mr. Dewar and myself distinctly felt a thin, hard, wiry substance, which might be the missing needle. The exposed portion was felt to be about three quarters of an inch in length, and by pressing on it with the finger-nail, was ascertained to have both its extremities firmly fixed in the adjacent tissues.

The long curved forceps, which are generally suitable for the removal of

such bodies from the pharynx or œsophagus, were quickly procured, and with these means Mr. Dewar and myself made repeated attempts at extraction. To seize a small piece of thin wire, lying close to the lower portion of the anterior wall of the pharynx, was an operation of considerable nicety; but the seizure was rendered much more uncertain and difficult by the unruly condition of the patient. Once and again a portion of the needle was fairly between the blades of the forceps, which were forthwith firmly closed; but, on attempting to extract the needle, the forceps lost their held. From the flattened form and great length of the blades of the common œsophageal forceps, they seemed unfitted to grasp, with any degree of firmness, such a small body as that now under consideration. A long pair of curved forceps, with strong handles and comparatively short blades, were therefore procured, and with them I was fortunate in seizing the needle, which was first freed at one extremity, and then extracted by a slightly wriggling movement.

As I supposed that the irritation caused by the presence of the foreign body, and also by the means used for its removal, might give rise to inflammatory swelling in the pharynx, I sent the patient to bed, and ordered small doses of tartrate of antimony to be administered to her at intervals during that night and next morning. Twenty-four hours after the extraction of the needle, she returned home, at her own request. During the four following days she had slight dysphagia, and pain on the larynx being pressed against the bodies of the cervical vertebræ. Since that time she has been in perfect health, and free from all uneasiness,

ART. 119.—*On the treatment of Goître by the external application of Biniodide of Mercury.* By Dr. FRODSHAM, Physician to the Farringdon General Dispensary.

(*Lancet*, June 2, 1860.)

Dr. Frodsham reports very favorably respecting this plan of treatment—a plan to which we have already directed attention ('Abstract,' XXVI, 175), as having been carried out with marked benefit in India, by Captain Cunningham, of the 11th Irregular Cavalry.

"I have myself," says our author, "had considerable opportunity of testing its efficacy, and always with a most fortunate result. A certain amount of difficulty is, however, experienced in its application, as the influence of the solar rays appears to be absolutely essential to its curative action, and therefore in this country it can only be adopted with perfect success during a few of the summer months. The following is the plan I have invariably pursued with the patients under my care:

"An ointment of the biniodide (biniodide of mercury, sixteen grains; lard, one ounce) has been first rubbed into the swelling for several days. Then seizing the opportunity of a powerful mid-day sun, the patient has been exposed to its influence, the throat being thoroughly smeared with the same application, and the head well elevated. It is generally borne for upwards of an hour, when a severe *sensation* only of blistering is produced. The patient should then be allowed to return home, and cautioned *not to rub off* the ointment.

"Dr. Moreal suggested the application of artificial heat; and thinking it possibly might have a similar influence, though in a modified

degree, I made several experiments, though, I regret to say, with but little success. In one case I caused the patient to sit before a large fire; in another, I held a hot flat-iron a short distance off the swelling. In the latter case, the pain was so great as to demand immediate discontinuance.

"Some of the cases in which this treatment was most eminently successful had been of long standing, and all the usual remedies, both internal and external, had been tried in vain. One woman had suffered from the swelling for four years, and for upwards of one year had been taking the iodide of potassium internally, and applying the iodide-of-potassium ointment externally, but without deriving the slightest apparent benefit. The biniodide was only applied *once;* and before the expiration of a month a diminution of two inches, by measurement, in the size of the tumour had taken place. At the end of six months no sign of the former disease was perceptible.

"The superiority of this mode of treatment consists in its great cleanliness, its not discolouring the skin, and causing no external breach of surface, together with its speedy remedial action (one application generally sufficing). As to the *modus operandi*, whether it is due to rapid absorption, or to chemical changes, is, I believe, as yet undecided."

(B) CONCERNING THE CHEST, ABDOMEN, AND PELVIS.

ART. 120.—*An accident in which the Lung was lacerated without Fracture of the Ribs.* By Mr. BRYANT, Assistant Surgeon to Guy's Hospital.

(*Guy's Hospital Reports*, 3d series, vol. vi, 1860.)

This case, which appears to be the only one of the kind on record, is related by Mr. Bryant, in an able and instructive report "on the surgical diseases and injuries of the nose, larynx, thorax with its contents, and of the organs of circulation."

CASE.—It took place in a boy, æt. 7 years, who, when playing in the road, was knocked down by the shaft of a cart; the wheel caught him by the left side of the lower part of his abdomen and turned him round, and stopped when just about to pass over the thorax.

Intense dyspnœa and severe hæmoptysis immediately resulted, and he was brought to Guy's. He was admitted under the care of Mr. Birkett, and as I happened to be at the hospital I saw him. He was then in bed, lying on his right side, half turned over on to his abdomen, with his legs drawn up and flexed. There was intense dyspnœa and cough, accompanied with hæmoptysis. He was quite collapsed, and nearly unconscious; no indications of fractured ribs could be detected. He never rallied, dying two hours after the accident.

At the post-mortem the only external sign of injury was a bruise on the left side of the back. There was no fracture of the ribs, or any external indication of injury to the thorax. The right chest was filled with air and some ounces of blood, which evidently came from a laceration of the lower edge of the middle lobe of the right lung, about three inches long. The lung was partially collapsed. In the abdominal cavity were a few ounces of

blood, from a laceration of the upper edge of the liver. There was also effused blood about the left kidney, from laceration of the suprarenal capsule.

Remarks.—This case is merely quoted to illustrate the fact that a laceration of the lung may take place independently of any fracture of the ribs. It is difficult to account for such an accident. As the patient was young, being only seven years of age, with ribs consequently more elastic, and the chest more capable of compression, it appears probable that the chest may have been so compressed, that the lung was dragged from its central attachment sufficiently to lacerate it. The interesting fact, however, remains, that there was no fracture, and yet a laceration—a point worthy of remembrance.

ART. 121.—*A case of Gunshot Wound in which the bullet was found in the wall of the right ventricle of the heart eighteen years afterwards.* By Dr. G. B. BALCH.

(*Amer. Med. Monthly*, Sept., 1860.)

CASE.—In June 1842, an Irish boy, by the name of John Kelly, received an accidental shot in his right shoulder; the ball passed through three inch boards before it struck him. A surgeon was called, who probed the wound, and found the ball lodged nearly under the inner third of the clavicle. The ball entered the shoulder through the upper border of the trapezius muscle, about an inch and a half or two inches from the acromion process. There was not much hæmorrhage at the time, and the surgeon did not deem it prudent to remove the bullet, and in about six weeks the boy was able to be at work. This accident occurred at Chatham Four Corners, Columbia Co., N. Y. In 1844 Mr. Kelly came to this county (Clinton), where he has since resided.

Fourteen years ago he was taken very dangerously ill with pneumonia, accompanied with a very severe and irregular palpitation of the heart. Dr. Terry, who attended him at that time, says he did not expect his recovery. Ever since that sickness his heart has shown symptoms of organic disease, at times beating in such a tempestuous manner, that one standing ten or fifteen feet from him could see its action very distinctly. Ever since he was shot he has had strabismus and, at times, inflammation of the right eye.

His last sickness was caused by going into the water, ten days before his death, and taking a severe cold; his heart then commenced its action with redoubled fury, accompanied with dysphonia, and severe pain in his shoulders and arms. His right arm became purple and cold before death.

On Friday, June 15th, 1860, I made the post-mortem examination, by request of Dr. Terry, who was his attending physician. The autopsy revealed a condition of things I did not expect. The right subclavian artery was filled with ossific matter at the thyroid axis; the other arteries were healthy. The right internal jugular and subclavian veins were enlarged; the right external jugular was closed near its union with the internal; I found the remains of the vessel where it entered the internal jugular.

The upper lobe of the right lung was congested. There were no tubercles in the lungs, but there was considerable pleuritic adhesion.

The heart was enlarged, and undergoing fatty degeneration. The pericardium was very adherent; so much so that I could not separate it from the heart, without cutting either one or the other. At the lower part of the right ventricle I felt a hard lump. I passed my finger into the right ventricle, and, found the lump to be in the wall of the ventricle, near its lower part. I then

cut with my scalpel from the outside down upon the lump, and found it to be a leaden bullet, slightly flattened.

Now the query arises, How long had this bullet been in the heart? I will not advance any theory of mine; I think the facts of the case tell the story without any theorizing.

ART. 122.—*A new method for the reduction of Strangulated Hernia.* By Mr. WALTER JESSOP, Surgeon to the General Hospital and Dispensary, Cheltenham.

(*Lancet*, Oct. 20, 1860.)

In May last Mr. Jessop was called to a case of strangulated hernia (left oblique inguinal), in a man aged fifty-two years. The accident had occurred some thirty-six hours previously. The taxis, opium, chloroform, hot baths—in short, all the ordinary modes of treatment, had been perseveringly applied, without success.

At the time of his visit, he found his patient in a partial state of collapse, in a profuse cold perspiration, with great tension of the abdomen, and symptoms of hiccough and nausea coming on. The patient complained bitterly on his lightly attempting an examination; indeed, the part seemed so exquisitely painful as at once to negative all hope of success from further direct efforts at reduction. An immediate operation was proposed, but firmly declined by the patient and his friends. Desiring them to seek further advice, Mr. Jessop left the room, but was immediately recalled, with a request that he would permit an hour's delay. Agreeing to this, and while waiting in the house, a thought struck him that it might occasionally be possible to relieve a patient under such circumstances without having recourse to the knife. On explaining this to the patient and his friends, they at once consented to a trial of the means proposed.

Calling a male attendant into the room, he directed his patient, still lying on his back, to the edge of the bed, and, with assistance, separated his legs, placing one over each shoulder of the attendant, who, facing the bed, stooped to receive them; and, in this position, by passing his hands round the fore-part of the thighs, was enabled to obtain a sufficient purchase to permit of his raising him on to his head and shoulders on the bed, thus throwing the intestines back upon the diaphragm, and to some extent necessarily making traction behind and directly *from* the seat of strangulation. After two or three minutes' manipulation of the abdominal parietes, he found the tumour become less tense, and drawing forwards the integuments round the point of rupture, he made lateral, upward, and downward movements—jerking, as it were, occasionally, the parts immediately contiguous to the stricture. This seemed to excite but little suffering; in fact, the patient, so far from uttering complaint, declared himself, after the first two or three minutes, decidedly relieved—that "the dead sickening weight that killed his groin," as he termed it, was better. Continuing these efforts, and varying them as they seemed to occasion distress, he presently felt a slight gurgling under his hand, and almost immediately

had the satisfaction of finding the hernia reduced, and his patient comparatively in a state of safety.

The whole proceeding did not occupy ten minutes. Slight peritoneal tenderness existed for some days, but the man eventually did well.

The *rationale* of the proposed plan is simple. A mass, large or small, of displaced intestine or omentum, must assuredly be more readily withdrawn from its point of incarceration or strangulation by traction from behind than by the best-directed efforts of the taxis. Any one, for illustration, taking the trouble to put a fold or two of his handkerchief in a ring formed by his finger and thumb, and lightly strangulating it, will, on attempting to return it by pushing or kneading from before backwards, find infinitely greater difficulty in effecting his purpose than if he were to make traction from behind. In short, the employment of the taxis is at the best a clumsy and most uncertain mode of proceeding, and in future the author intends to make it merely supplementary to the plan he now advocates.

"One swallow fails to make a summer," and it may be said that the practice of turning patients *à posteriori* upwards is opposed to all orthodox notions of propriety. Admit all this. Others, with greater opportunities, may happily be enabled to add to this single case; and granting that the position of the patient may be accused of positive inelegance, it may, at any rate, contrast favorably with our proceedings in lithotomy, and in many other operations on the perineal region.

Art. 123.—*On the relations of Hernia to Internal Strangulation.* By M. Duchaussoy.

(*Archiv. Gen. de Med.*, Feb. and March, 1860; and *Med.-Chir. Review*, July, 1860.)

During an examination of the details of many hundred cases of internal strangulation, the author of this memoir was induced to investigate the relations which this affection sometimes assumed with respect to hernia. His observations, based upon thirty-nine instances, several of them English, run to some extent; but we can only here notice his chief propositions. Of these he has nine, founded each upon some circumstance of practical import.

1. His first class of cases comprehends those in which, although no hernia was visible at the period of strangulation, this strangulation has still been supposed to have been due to a hernia. This error he shows has been committed by surgeons who, by good right, hold the highest rank; and it is to be remembered that "an internal strangulation, especially if occurring near to the lower end of the intestine, may give rise to the production or the reappearance of a hernia, which may induce error as to the real seat of strangulation."

2. On the other hand, cases have been believed to be internal strangulations, when they have really been examples of external hernia; and this, too, in spite of careful examination by an experienced hand. Sub-pubic hernia has been the chief rock here in the way of an accurate diagnosis; small femoral hernia, or such as have taken an unusual direction, also sometimes giving rise to difficulty.

3. In a third class of cases, a deserted sac has formed a tumour in the herniary canal, and given rise to the belief that this was the seat of strangulation.

4. The presence of a hernia during the existence of an internal strangulation of slow progress may for a while give rise to the belief that the strangulation is seated in the hernia, an opinion which is falsified by a continuance of the symptoms in spite of the certain return of the hernia. These cases are not infrequent, but owing to their slower progress the surgeon usually has time to correct his diagnosis. The following rule should be borne in mind:—"Whenever, conjoined with very intense symptoms of internal strangulation, the surgeon finds a hernia easily reducible, he should suspect that the strangulation is not due to the latter; and his suspicion becomes converted into a certainty when the symptoms persist, or are only slightly relieved after the reduction of the hernia."

5. A hernia which is habitually returnable may not only cease to be reducible, when the portion of intestine which constitutes it is situated above the internal strangulation; but the changes which then take place in the volume of this hernia may give rise to a consecutive strangulation, if the cause of the occlusion be not discovered by the surgeon, or if it be not in his power to remove it.

6. The irreducibility of a hernia coinciding with an internal strangulation may be quite independent of such strangulation.

7. Thus far we have considered internal strangulation complicated by hernias which were independent of it, or which could be considered as one of the effects of the strangulation. We now have to do with internal occlusions, of which external hernia is the cause. The agent of strangulation may be inherent to the strangulated intestine itself, or it may be furnished by neighbouring organs—as the omentum, the sac, or the peritoneum—either while occupying their primary seat, or dragged thence by the noose of strangulated intestine. These various agents are examined by the author in great detail, but we can only enumerate some of them—viz., stricture caused by the sac, exudation from inflammation of the hernia, the twisting of one end of the intestine around the other, strangulation by a bridle independent of the sac, strangulation by the neck of the sac, &c.

8. An internal hernia, the real seat of strangulation, coincides with an external hernia. This internal hernia has been named differently, according to its locality—as intra-iliac, when placed in the iliac fossa; between the peritoneum and the fascia iliaca, retro-cæcal, &c.

9. Internal strangulation arising at a more or less remote period from the date of the operation for hernia, and due to consecutive changes in the intestine itself, the formation of peritoneal bridles, &c.

Of the 39 cases upon which this memoir is based, in 25 the internal strangulation was connected with single inguinal hernia, in 9 with single femoral hernia, in 2 with umbilical hernia, and in 3 with double inguinal. With respect to the situation of the internal strangulation as regarded the hernia, it was in 28 of the cases *on the same side*, and very near the ring by which the hernia made its exit. In 7 cases it was situated a little farther off, but still capable of being reached, or nearly reached, by a prolongation of the incision made in operating

upon the hernia. In a single case, the obstruction was on the opposite side of the hernia. Thus in 35 out of the 39 cases the presence of the hernia was intimately connected with the internal strangulation; so that had the rule prevailed, that in all cases of the simultaneous existence of hernia and internal strangulation the obstacle is to be sought for near the hernia, or at least on the same side, it is evident that in these 35 cases the seat of the obstruction would have been exposed.

ART. 124.—*Case of Femoral Hernia presenting some peculiarities.* By Mr. ADAMS, Surgeon to the London Hospital.

(*Proceedings of the Royal Med. and Chir. Society*, March 27, 1860.)

The hernia in this case descended beneath the pectineal portion of the fascia lata, and was partially covered by the pectineus muscle.

CASE.—The patient was a female, æt. 45, who was admitted into the London Hospital labouring under the usual symptoms of strangulated hernia. After the most careful inquiry into the history of the case, the conclusion arrived at was that, as no hernial swelling could be detected in the region of the crural opening, the case was one of femoral hernia, which had been reduced by the taxis, and in which the symptoms continued, probably from the effects of the stricture upon the intestine. There were two moveable lymphatic glands perceptible in the crural region. The woman complained of dull pain in this region. Under this impression, a grain of opium was administered every four hours, and the sickness subsided. On the third day after the commencement of the opiate treatment, the symptoms reappeared with increased intensity. A further examination was made, but no hernial swelling was detected. An injection of warm water was ordered night and morning, and a grain of calomel, with half a grain of opium, were ordered every four hours; brandy and wine were also administered. On the fifth day after her admission all her symptoms became exacerbated, and she was at once taken into the operating theatre for a more complete exploration of the femoral ring. When placed on the operating table, with the thigh everted, a fulness, rather than a swelling, was perceptible, apparently under the edge of the adductor longus. The skin and superficial fascia were divided over this swelling, and a little dissection exposed a dense, elastic fascia, slightly raised into a convex bulging. From its position and depth, the fascia was at once recognised as the pubic portion of the fascia lata; it was remarkably tense. Mr. Adams carefully scratched it with the scalpel, and it was divided on a director. Some red fibres were clearly distinguishable overlapping the swelling under the fascia, which, from their direction, were evidently part of the pectineus. It was necessary to cut these transversely inwards on a director. The hernial sac was now exposed, and its neck was traced to the femoral ring. A portion of omentum, much congested, was found in the sac, under which was some small intestine in a gangrenous condition, and there was some dark fetid pus in the sac. The stricture was divided, and a portion of the omentum was removed. A quantity of feculent matter escaped on the division of the stricture. The wound was lightly dressed, and stimuli were administered. She died four days after the operation.

Autopsy.—The hernia had descended through the femoral ring, but was not in the femoral sheath. It reached at least four inches below Poupart's

ligament, and was situated behind and internal to the femoral vein in the direction of the pectineus muscle. The muscle, deprived of its investment of fascia lata, was deeply excavated by the lodgment of the hernia; a few of the fibres of the muscle—namely, those arising from the spine of the pubis—projected in the form of a fleshy column, and had overlapped the hernia; the remainder of the muscle was atrophied and sloughy. The remains of the pectineal portion of the fascia lata, which was somewhat sloughy, still covered this fleshy column alluded to. The hernial sac was sloughy, and contained omentum and a small piece of intestine, quite gangrenous. The peritoneal surface of the small intestine in the abdomen was inflamed, and the intestines were agglutinated by recently effused lymph. The result of the investigation made during the operation and after death tends to show—1st, that the hernia was of the femoral species; 2d, that the descent had not taken place in the femoral sheath; 3d, that it had passed through some unusual opening or slit in the pectineal portion of the fascia lata; 4th, that there was a usual development of the inner fibres of the pectineus, which had formed a fleshy column over the hernia. It appears also most probable that an epiplocele had existed for some time, and that a more recent descent of intestine had occurred, which had become strangulated.

ART. 125.—*On the treatment of Fissura in Ano by forcible dilatation of the sphincter.* By M. ROBERT.

(*Journ. of Pract. Med. and Surgery*, Sept., 1860.)

A woman, æt. 30, was admitted into M. Robert's wards, complaining of pain in the anal orifice, which had lasted six months, and persisted with considerable intensity for three or four hours after defecation. On careful examination of the anus, several small folds, indicating faded hæmorrhoids, were detected, and on one, seated at the posterior part of the aperture, was discovered a deep longitudinal ulcer. This sore was found to be somewhat indurated. and at about ten lines from the anus, the sphincter was observed to be in a permanent state of spasmodic contraction, barely admitting the extremity of the finger. In this instance, therefore, the two necessary elements of the disease, so fully described by Boyer under the name of *fissure of the anus*, were distinctly present.

In M. Robert's opinion, the ulceration and spasm are closely connected with each other, but the ulcer is the primary element of the disease, the spasmodic contraction being the consequence of the irritation of the mucous lining. Constipation originally causes the hard fæces to excoriate superficially this membrane; or the wound may result from the passage of a fruit stone or a piece of bone. Inflammation, and *à fortiori* excoriation of a mucous surface, amply account for spasmodic contraction of the subjacent muscular layer; but in the morbid condition under consideration the spasm of the sphincter indefinitely protracts the disease; the expulsion of fæces being more difficult in proportion to the tightness of the contraction; hence it is often necessary to attend at once to the secondary element of the complaint. It is not, however, desirable to begin by the incision of the sphincter, as Boyer recommends. M. Robert holds that this operation, which is always more or less serious, may give rise to

phlebitis, to erysipelas, and has even occasionally proved fatal. Although professing slender confidence in the efficacy of local applications, he resorts to them in the first instance; injections of krameria, and belladonna ointment he has not found beneficial. The ointment, which in recent cases seems most likely to succeed, is the *onguent de la mère*,* recommended by Campagnac, and often used with much advantage at the military hospital of Val-de-Grâce, by M. Larrey. The sore once healed, the spasmodic contraction relaxes, a further peremptory proof of the close connexion existing between these conditions. As we have stated, however, local remedies are but of slight efficacy, and when the fissure is of long standing, a surgical operation is indispensable.

When hæmorrhoids exist as a complication, their excision has sometimes effected a cure of the fissure, a result which seems to justify the procedure of excision adopted by M. Jobert de Lamballe; but this operation, although unobjectionable in itself, is far more laborious than dilatation.

The latter is the method which M. Robert prefers. Introduced into surgical practice by the late Professor Récamier, dilatation was open to one reproach only, which chloroform has since removed, viz., that of inducing considerable pain. The operation consists in the successive insertion of both forefingers into the anus, which is then forcibly distended in several directions.† M. Robert does not consider it necessary to lacerate the fibres of the sphincter, a plan which would be open to the same objections as division with the knife. The operation elongates the muscular ring and overcomes its contraction; in addition, the fissure, which occupies a less extensible texture, is in all probability torn and transformed into a wound of a simple character. However this may be, M. Robert has resorted to forcible dilatation in a very considerable number of cases, and it never has failed in effecting a cure. It should, moreover, be added that this practitioner has never observed the least untoward consequences arising from the operation.

In the patient who suggested these remarks, M. Robert, in the first place, removed the hæmorrhoidal folds, and proceeded with the dilatation of the sphincter muscle. In the course of the day, a motion took place, followed by some pain, due to the contact of irritating material with the little wounds resulting from the excision, but in three days a complete cure was effected of a disease which had lasted six months. One of the most remarkable instances of success obtained from this operation by M. Robert was in the case of a lady who, after each motion, suffered for twelve hours excruciating agony. Dreading defecation, the patient has ceased to take anything like adequate nutriment, and was reduced to a fearful state of emaciation. M. Robert placed her under the influence of chloroform and distended the sphincter, a teaspoonful of blood escaped, and on the very first day,

* A combination of basilicon and lead plasters.

† Forcible dilatation may be performed suddenly with the forefingers, or with a bi-valve speculum, introduced closed and withdrawn open; or gently and gradually by the successive introduction into the anus of both thumbs, which are subsequently parted until their palmar aspect comes into contact with the tuberosity of the ischium on either side. This procedure is recommended by M. Nélaton.

a considerable quantity of fæces was evacuated, and in the course of a week the recovery was complete.

This operation, introduced by M. Récamier, is the simplest and most humane that can be instituted under the circumstances. It exposes the patient to no peril, requires no dressings, and effects a rapid and safe cure. It may, therefore, be resorted to with perfect security, except when enormous indurations are present, and it should certainly be preferred to all the methods of treatment recommended for the relief of this cruel and obstinate disease.

ART. 126.—*On the treatment of Congenital imperfection of the Rectum by operation, founded on an analysis of* 100 *cases.* By Mr. CURLING, Surgeon to the London Hospital.

(*Proceedings of Royal Med. and Chir. Soc.*, June 26, 1860.)

With the view of ascertaining and estimating the results of the operations which have been resorted to in the different forms of congenital imperfections of the rectum, either for the preservation of life or its future comfort, and of assisting to establish the best modes of proceeding in these cases, the author has collected and tabulated 100 cases in which operations have been performed by himself and other surgeons. Of these cases, 68 were males and 32 females. He classes the congenital malformations of the rectum as follows:

1. *Imperforate anus, the rectum being partially or wholly deficient.*—Of this form the table furnishes 26 instances—21 males and 5 females.

2. *Anus opening into a cul-de-sac, the rectum being partially or wholly deficient.*—Of this the table includes 31 cases—17 males and 14 females.

3. *Imperforate anus in the male, the rectum being partially or wholly deficient, and communicating with the urethra or neck of the bladder.*—Of this the table contains 26 cases.

4. *Imperforate anus in the female, the rectum being partially deficient, and communicating with the vagina.*—Of this the table furnishes 11 cases.

5. *Imperforate anus, the rectum being partially deficient, and opening externally, in an abnormal situation, by a narrow outlet.*—Of this form the table contains 6 cases.

A few other congenital deviations have been observed, but they are of very rare occurrence, and the five forms enumerated above are alone included in the table. The author briefly relates a case of fæcal fistula, passing from the back of the sacrum to the rectum, which fell under his own observation.

After briefly reviewing the causes of these malformations, and showing that, though in most instances consequent on an arrest of development, they sometimes result from a pathological change due probably to inflammation occurring during intra-uterine life, the author notices the relations of the peritoneum to the bowel in the different forms of atresia, as having an important bearing on the operations performed in the perineal region, and states that in several

instances in the table the fatal result was due to the opening made in the serous sac. He also calls attention to an imperfect development of the pelvis in those cases in which the rectum is wholly deficient.

1. The 26 cases in the table of the first form furnish the following results:—In 14 cases the gut was opened in the anal region, and in 12 the operator failed to reach it. Of the former, 9 ended fatally and 5 proved successful. Of the 12 cases in which the gut was not reached, 2 ended fatally without anything further being done. In 7, colotomy was performed in the groin; 1 only proved fatal. In 3, the colon was opened in the lumbar region; 1 recovered and 2 died. The author gives some particulars of the 5 successful cases, and notices that there is only 1 of complete success in which the rectum was wholly wanting. In 3 of the cases in which the bowel was simply incised, more or less difficulty was experienced afterwards in maintaining a free passage for the fæces, but in 2 of the cases subsequent contraction was prevented by drawing the bowel down to the anal region.

2. In 16 of the 31 cases of the second form the gut was reached and opened. In 11 the operator failed in finding it. Of the former, 6 were fatal and 10 recovered. Of the 11 cases in which the gut was not reached, 6 ended fatally without any further operation. In 2, colotomy was performed in the groin with a fatal result. In 3 instances the colon was opened in the loin; 2 were fatal and 1 recovered. In 4 cases colotomy was performed without any previous sub-pubic operation; three times in the groin with successful results, and once in the loin with a fatal termination. In analysing the ten cases of success after a sub-pubic operation, the author shows that in several cases in which the septum was slight the passage was readily established; that in others, where a space of some extent intervened between the two ends of the bowel, great difficulty was experienced in preventing contraction, unless the bowel was drawn down and attached to the skin, and he gives the particulars of a case treated by himself in this way with complete success.

3. The author adduces some cases of the third form, in which, the communication between the rectum and urethra being more free than usual, life has been preserved for many months, the fæces escaping entirely by the urethra, until the passage becoming at length blocked up, death has ensued. Of the 26 cases in the table the gut was reached in 15; in 9, the operator failed to find it. Of the former, 9 recovered and 6 proved fatal. Of the 9 cases in which the gut was not reached, 7 ended fatally without any further operation. In 1 colotomy was performed in the groin, in the other in the loin; both ended fatally. In 2 cases no attempt was made to reach the bowel from the perinæum, but the colon was opened in the loin. One did well, the other died. In 7 of the successful cases treated by incision more or less difficulty was experienced afterwards in maintaining the passage. In the only case in which the bowel was drawn down and secured to the skin no contraction took place, and the boy was well and thriving at five years of age. After the establishment of a passage at the anus the escape of fæces by the urethra did not always cease, and several instances are

given in which serious inconveniences resulted from non-closure of the abnormal communication.

4. The author, after alluding to instances of persons born with imperforate anus, the rectum opening into the vagina, who have passed through life submitting to the annoyances consequent upon it, states that the recto-vaginal communication is not always sufficient, and that obstinate constipation sometimes ensues. As the rectum descends low in the pelvis in this form, the operator cannot well fail to reach the bowel. In all the 11 instances in the table the gut was opened, and only 1 ended fatally, from over-distension of the rectum, consequent on the operation having been delayed too long; 8 of the 10 remaining cases are reported as successful, and 2 as unsuccessful, owing to the tendency to contraction and neglect by the parents of the means recommended to maintain the passage. In one of the successful cases the bowel was drawn down and secured to the skin. The author gives the particulars of two cases which came under his own notice, one successful, the other unsuccessful. In this malformation the establishment of a new passage at the natural site is not all that is required. We have also to obtain the closure of the abnormal communication with the vagina. A case in which this opening is reported to have closed spontaneously is the only one of complete success in the table. The author is unacquainted with a single case in which, after the formation of an artificial anus, a successful operation has been performed for the closure of the recto-vaginal aperture.

5. Of the fifth form there are 6 cases in the table—4 males and 2 females. In the males the abnormal outlet was in the perinæum, just behind the scrotum, in 2, in 1 in the scrotal raphe, and in 1 anterior to the scrotum. In the females the opening was in the perinæum, close to the vagina, or at the posterior commissure of the vulva. In all the cases the vent was insufficient, and defecation more or less difficult. In this form, as in the last, the rectum can be easily reached, and it was opened in all six cases. Two different operations have been practised to remedy this imperfection:—1, the enlargement of the original outlet, which was done in two instances; and 2, the establishment of a new anus at the natural site, which was performed in the four other cases. The author, after giving a detailed account of one of the cases in which he had recourse to the latter operation, contrasts the advantages of the two methods.

In cases of imperforate anus, in which a passage is successfully established, the retentive functions of the bowel generally exist in sufficient force. Satisfactory evidence on this point is furnished by several of the cases in the table, and the existence of an external sphincter has been frequently recognised in dissection.

The author, after noticing that in cases of imperforation unremedied by operation, death is sometimes caused by extreme distension and rupture of the colon or the terminal pouch, remarks, that the most common causes of death after operation are peritonitis and diffuse inflammation of the areolar tissue. The former is generally produced by a wound of the serous membrane, the latter by the passage of fæcal matter through the tissues of the pelvis, both being



The author considers the two operations in reference chiefly to three questions- the difficulties of the operation, its dangers and the condition and convenience of the artificial anus. The operation

is admitted to be one of greater difficulty in the loin than in the groin; and after remarking on some of the causes of this, the author notices the irregularities in the disposition of the colon, which render it impossible to open the bowel in the left loin without wounding the peritoneum, and which prevent the operator finding the colon in the left groin. The author practised both operations on the bodies of twenty infants, and in two he was unable to open the colon in the left groin, in consequence of the colon making a sharp curve and passing over to the right side before reaching the pelvis. In six subjects lumbar colotomy was impossible without opening the peritoneum, owing to the colon being attached by a distinct mesentery and being loose in the abdomen. This serious impediment once occurred to the author in performing lumbar colotomy in a case of imperforate anus. In respect to the dangers of the two operations, the results of the cases in the table are much in favour of colotomy in the groin. The author quotes the description given by Rochard of the condition of the anus in the groin in two patients, who had been operated on many years previously. Both were in good health, and suffered very little inconvenience. One had married and borne children. In all the patients observed by Rochard, prolapsus had taken place from the lower part of the bowel, but it was easily restrained. The author also gives a particular description of a case, which has recently come under his own notice, of an artificial anus in the loin in a boy eight years of age, born with an imperforate anus, the rectum opening into the urethra. The anus was sufficient, but fæces escaped occasionally into the lower part of the bowel and caused difficulty in micturition. To obviate this difficulty, he had suggested the lodgment of a sponge-plug in the lower opening. The author sees very little to justify a preference for either operation on the ground of the position of the anus, but the greater difficulties and dangers of lumbar colotomy would induce him in future to select the inguinal operation.

The author controverts the views recently advanced by Nuguier in favour of the performance of colotomy in the right groin in preference to the left, and shows by several examinations of infant subjects that the passage of the colon from the left iliac fossa to the right fossa is not so constant as he states.

The author, in conclusion, gives particular directions for conducting the operative treatment of imperfections of the rectum based on the results of this inquiry.

ART. 127.—*On Allarton's lithotomy operation.* By Mr. NATHANIEL WARD, Assistant Surgeon to the London Hospital.

(*Lancet*, June 9, 1860.)

"The comparatively greater safety, simplicity, and facility of the operation recommended by Mr. Allarton," says Mr. Ward, "appear to me to constitute its peculiar merits. On the six occasions on which it has been performed at the London Hospital, either by my colleagues, Messrs. Critchett and Gowlland, or by myself, the steps recommended by Mr. Allarton have been followed with but a slight variation. The

staff having been introduced into the *uninjected* bladder, the prostate was made out by the left index finger passed into the rectum, and its apex was steadied by it against the staff. A scalpel, with the blade half an inch longer than the length of the finger in the rectum, and having a straight cutting edge and curved back, was introduced with the cutting edge upwards into the perineal raphé, about half an inch in front of the anus, and passed steadily downwards and backwards until its point impinged in the groove of the staff, cutting through the lower wall of the back part of the membranous portion of the urethra, just in front of the point of the index finger.

"The knife was then carried forward about the eighth of an inch along the groove of the staff, and was then withdrawn by sweeping it upwards and forwards (as regards the operator), so as to make a median cutaneous incision about an inch in length. A common bone probe, set in a rough handle, was next passed along the groove of the staff into the bladder. The staff was then removed, and the left index finger, well greased, being passed along the *upper* surface of the probe to the prostatic urethra, arrived through this, after several graduated rotations, into the vesical cavity. The forceps were next introduced along the upper surface of the finger, and the calculi removed.

"Thus it will be seen that the only points in which this lithotomy differed from Mr. Allarton's directions were—the use of the form of scalpel alluded to, and the incision of the membranous urethra by drawing the knife forwards and upwards, instead of passing it towards the prostate in the contrary direction. The cases were all successful, and the patients rapidly recovered.

"Independently of the many recommendatory points in this method of urethral lithotomy insisted on by Mr. Allarton, the *necessity of injecting the bladder* before cutting *does not exist*, inasmuch as the cavity of the viscus is not cut *into;* and the bladder is not in danger of being wounded, as the incision nearest to it is carried away from it towards the operator. But there is an important reason why *the bladder should not be injected*, and it is this—the prostate gland is taken to be, so to speak, the landmark of the operation. This organ in children is very small, and it requires a little education of the finger in order readily to detect it. If the bladder is tense in consequence of retained urine or injected fluid, the walls encroach on the immediate area of the gland, and the prostate is then not easy to be felt. On the contrary, when that viscus is not distended, the prostate stands out in comparatively prominent relief, and can easily be felt by the finger, and steadied against the staff.

"I have little doubt that Allarton's operation will, in course of time, be generally adopted for the removal of small or average-volumed calculi from the bladder, and I cannot but think that since its introduction it would have received ere this a greater amount of sound surgical sanction had some lithotomists of the day, of the highest authority, deviated, in a spirit of inquiry, from a beaten track, and experimentally tested the applicability and efficiency of this modified Marian operation, the revival of which must be regarded as a useful addition to the resources of the healing art, and as a high compliment on the part of modern to ancient surgery."

ART. 128.—*On Allarton's Lithotomy Operation.* By Mr. BARNARD HOLT, Surgeon to the Westminster Hospital, &c.

(*Lancet*, Sept. 8, 1860.)

The main objections which have been hitherto urged against this operation have referred to the size of the stone and the enlargement of the prostate gland, the consequent difficulty of extraction, and the ill effects of forcible dilatation on the neck of the bladder. In this paper Mr. Holt relates three cases in which he has lately performed this operation, where these difficulties were prominent features; and the result shows that these difficulties have been much overrated.

Speaking generally of these and other cases, Mr. Holt says: "From all that I have yet seen of Mr. Allarton's operation, I consider it a most valuable one: the wound is less; the hæmorrhage is less; the constitutional disturbance is less; there is no chance of infiltration of urine; and, as a matter of comfort to the patient, the ability to retain the urine is of the utmost value and importance."

ART. 129.—*A modification of the high operation for Stone in the Bladder.* By Dr. H. S. HEWIT, formerly of the United States Army.

(*New York Jour. of Medicine*, March, 1859.)

The patient was a lad, æt. 19, or thereabouts. The operation, which was performed in the presence of Drs. Mott, Batchelder, Van Buren, Stephen Smith, and others, is thus described:

"The bladder was emptied by a silver catheter, through which it was injected with tepid water to nearly its capacity. The ordinary abdominal section, commencing midway between the umbilicus and symphysis pubis, terminating at the superior border of the pubes, and completed through the linea alba, revealed the distended organ swelling into the space between the recti muscles. The water, having accomplished its objects, viz., elevation of the vesical reflection of peritoneum and ease of identification, was permitted to escape, and the flaccid viscus, raised upon the point of the retained catheter, was secured by a stout suture, passed through its coats and confided to an assistant, for the double purpose of holding it in position and retaining it under complete control.

"The place of incision being selected, and the absence of peritoneum certified, the bladder was pierced, the forefinger of the left hand of the operator introduced, and the division completed upon it, as a director, longitudinally downwards to the requisite extent; a slender forceps followed the knife, and the stone was gently rolled into its grasp with the point of the finger, and extracted with the utmost ease. The incision in the bladder was immediately closed by four points of interrupted silk suture, inserted with the aid of a sharp artery-needle, and the supplementary suture of support withdrawn. Owing to the admission of air, the bladder manifested a tendency to bulge between the recti muscles. To obviate this, and to prevent possible strangu-

lation, the sutures used in closing the external wound were, at the suggestion of Professor Van Buren, carried deeply through the substance of these muscles, and the inflated bladder thus, on bringing the edges of the incision together, pressed back into its natural position, the long ends of the cystic sutures and of the ligatures of two small arterial branches having been properly distinguished, and brought out of the lower end of the opening. Lastly, a gum elastic catheter was passed and secured by straps of adhesive-plaster carried around its free extremity, and laid upon the sides and superior and inferior surfaces of the penis. After the patient had been removed to bed, a large sponge, as a receptaculum urinæ, was attached to the end of the catheter, and placed upon an oil-silk protector between the thighs. The sponge was wet within an hour, and perfect drainage was in this manner maintained, and infiltration absolutely prevented.

"The operation was followed by a high degree of reaction and severe irritation.

"These symptoms were, in the opinion of a surgeon of the highest authority, and ample experience in lithotomy, more severe than those which follow favorable cases of the lateral operation. Vascular excitement and nervous irritability were, however, effectually controlled by the veratrum viride and Magendie's solution, and on the third day what may be called *resolution of shock* took place, when the countenance resumed its natural expression, the voice recovered its ordinary tone, and the pulse fell to the normal standard. As soon as this favorable change manifested itself, the patient was put upon superphosphate of iron and nutritious diet, with wine, and his bed and body linen ordered to be changed daily. On the *fifth day*, the bladder gave evidence of integrity, by expelling its contents independently, and the catheter was accordingly removed. The patient was directed to pass his water frequently, and to send for assistance in the event of any difficulty. Unfortunately, after passing water once or twice, he became nervous, and refused to repeat the effort. He concealed his condition until the accumulated fluid ruptured the new adhesions, and urine flowed through the track of the sutures and ligatures, already rendered tubular and lined with pus. Infiltration could not take place under these circumstances, and the accident was of no moment, excepting that it marred the beauty of the case. The fistula was not interfered with, and it closed on the twenty-fourth day from the operation, and the nineteenth from its occurrence.

"On the tenth day, the sutures of the bladder and the ligatures came away together. The loops of two of the sutures had dissolved their continuity, and two remained entire.

"On the eleventh day, the patient began to sit up, and continued to pass most of his time in his arm-chair.

"On the twenty-first day he walked out, and is at present able to go about, and attend to his affairs. The external wound healed partly by the first intention and partly by granulation. The urine was bloody for four days succeeding the operation, and very highly ammoniacal for several days more. It became, before the conclusion of the treatment, healthy and natural, with the exception of containing a very small quantity of pus."

ART. 130.—*Case of Calculus in the Bladder treated litholitically by injections of carbonate of lithia, &c.* By Mr. URE, Surgeon to St. Mary's Hospital.

(*Lancet*, Aug. 25, 1860.)

The treatment of stone in the bladder by means of the injection of certain substances possessing a solvent power, or of remedies taken by the mouth, has met with so little attention at the present day as to pass unnoticed in many of the recent works on surgery. The subject, however, is one of considerable interest and importance, and well worthy of revival in connexion with the operation for crushing stone. Of the two methods adopted for dissolving stone, that which has afforded the most positive results is through the direct contact of the solvent agent with the calculus in the bladder. Many years ago, Sir Benjamin Brodie demonstrated that phosphatic calculi were sometimes completely dissolved by means of dilute nitric-acid injections, or became so disintegrated that the fragments would readily pass along the urethra. In 1843, Mr. Ure made an effort to introduce the carbonate of lithia into notice as a solvent of uric-acid calculus; and in 1851, Dr. Elliott Hoskins, of Guernsey, advocated the use of a solution of the nitro-saccharate of lead, from its exerting a strong solvent action on phosphatic calculi. More recently still, Dr. Bence Jones has shown the possibility of the solution of lithic and phosphatic stones when placed between the poles of a galvanic battery; and he has succeeded in constructing an instrument to effect this desirable end, which can be introduced within the bladder (Druitt's 'Surgeons' Vade-Mecum,' eighth edition). Mr. Ure's plan, however, is the only one that we have had an opportunity of seeing adopted in hospital practice; and now that carbonate of lithia, the substance he employs, can be obtained more abundantly than formerly, since the publication of Dr. Garrod's work on 'Gout,' Mr. Ure considers that in certain cases of calculus it might be advantageously employed conjointly with lithotrity, as he originally suggested in his memoir published in 1843.

Carbonate of lithia is obtained from *lepodilite*, a hard silicious mineral containing three or four per cent. of the lithia. This alkali is a constituent of the aerated lithia water recently prepared by several chemists under the directions of Dr. Garrod; and is combined with either potash or ammonia. There is a point of importance, however, in the internal use of carbonate of lithia as a medicinal agent, which must not be overlooked—namely, that it forms a nearly insoluble triple phosphate with phosphate of soda, or with the triple phosphate of ammonia and soda—salts generally present in animal fluids. Hence, Mr. Ure does not recommend the internal use of this salt in the treatment of vesical calculus, for the reason that it would undergo decomposition and precipitation when coming in contact with ammonio-phosphate of soda, and thereby be rendered inert. In corroboration of this, we find the celebrated chemist Rose say, that if the liquid containing a salt of lithia be mixed with a solution of ammonio-phosphate of soda, an abundant precipitate is formed after standing a short time, which character distinguishes lithia from soda and potash. The double salt of phosphate of soda and lithia, according to the same

authority, is insoluble, or very sparingly soluble.* The value of carbonate of lithia internally for other than calculous affections has, therefore, yet to be determined by experience. Mr. Ure has found by direct experiment that a uric-acid calculus can be diminished at the rate of a grain an hour, by the presence of a regulated solution of the salt in the bladder; and its solvent power has been confirmed by Binswanger and many other German authorities.

Before injecting a solution of the salt of lithia, the bladder is washed out by means of distilled water, to get rid of all the phosphates in the urine, which would necessarily decompose it; and then the further steps are adopted as detailed in the notes of the case.

Case.—W. B—, æt. 56, married, admitted May 20th, 1859, with stone in the bladder. The patient observed, soon after Christmas last, that he experienced pain while voiding urine, and that this was dark coloured. He had medical attendance in the country. A month or six weeks prior to the date of his admission, he had calls to void urine as often as twenty times a day; and five days previously he was sounded by a surgeon, who detected the presence of a stone. On admission, he was sounded, and the calculus was readily found. He complained much of pain referred to the neck of the bladder and at the extremity of the penis during and after micturition. His general health seemed good in other respects. A careful examination of the urine was made. It was limpid when voided; of specific gravity 1024; it deposited spontaneously, when allowed to stand, lozenge-shaped crystals of uric acid, and also a few octahedral crystals of oxalate of lime; the amount of phosphates was small; it contained a trace of albumen, and some mucus. Mr. Ure, believing the calculus to consist chiefly of uric acid,—which was eventually proved to be the case,—determined to try the solvent power of carbonate of lithia, a remedial agent which he introduced to the profession several years ago in a paper published in the 'Pharmaceutical Journal,' vol. iii, entitled, "Observations and Researches upon a new Solvent for Stone in the Bladder."

Accordingly, on May 30th, 1859, he commenced the employment of a solution of carbonate of lithia. He emptied the bladder with a No. 9 catheter, as a preliminary step, to obviate decomposition of the carbonate of lithia from the presence of phosphates, phosphate of lithia being comparatively insoluble; and having next washed out the bladder with a little distilled water at a temperature ranging between 80° and 90° Fahr., he injected a solution of carbonate of lithia, containing two grains to the ounce, at a temperature of 84° Fahr. From two to three ounces of the solution were retained in the bladder. Mr. Ure saw the man in the course of half an hour, who said he felt no inconvenience whatever. The patient had no call to empty his bladder till two hours and a half had elapsed. The only trouble he experienced afterwards was difficulty in retaining his urine at night.

June 1st.—To counteract the continued deposit of uric acid, Mr. Ure prescribed a mixture, which he has found serviceable in such cases, composed of phosphate of soda, with infusion of uva ursi and tincture of henbane.

2d.—The man felt easier than formerly. The injection was repeated, of the strength of one grain of carbonate of lithia to the ounce of distilled water.

13th.—The injection, as above, had been resorted to every other day.

* 'Practical Treatise on Chemical Analysis,' by H. Rose, p. 15.

The patient was much easier than when he entered the hospital, and experienced little or no pain. There was a notable diminution of the ropy mucus which used to come away.

The above treatment was pursued every second or third day during some weeks, the patient remaining in a comparatively comfortable state, but there was no evident reduction of the size of the calculus. In order, therefore, to expedite matters, it was determined to crush the stone by means of the lithotrite. This procedure was accordingly had recourse to at suitable intervals, and considerable quantities of calculus were got rid of. It almost seemed as if the employment of the solvent had in some measure lessened the cohesion of the concretion, and increased its friability. The case was advancing steadily, and seemingly approaching a conclusion, when the patient got into a state of extreme depression, and during Mr. Ure's absence from town in the autumn succumbed. On cadaveric inspection, it was ascertained that another calculus lodged in the bladder.

ART. 131.—*On the condition of the Prostate in old age.* By Dr. J. C. MESSER, Assistant-Surgeon R.N., Royal Hospital, Greenwich.

(*Proceed. of Royal Med. and Chir. Society*, May 8, 1860.)

In order to facilitate the consideration of the details of one hundred dissections of the prostate after the age of sixty, the author arranges them into three classes; namely—

1st. Those under four drachms' weight.

2d. Those between four drachms and six drachms' weight.

3d. Those over six drachms' weight.

By so doing a broad division is at once made between those that are comparatively healthy—namely, the first and second classes—and those that are so altered as to be likely to affect the health of the patient, comprised in the third class.

In the first class there are twenty cases, giving—

	Minimum.	Maximum.	Medium.
Age	67	87	75·9
Weight	2 drs. 5 grs.	3 drs. 50 grs.	3 drs. 10 grs.

These cases, for the most part, differed from the normal state only in point of size, and offered no obstruction to the flow of urine. The presence of small black concretions was very general in these as well as in all the other cases. In four cases there were slight appearances of the formation of circumscribed tumours. In one case abscess was found associated with stricture of the urethra. In one the posterior lobe showed a tendency to enlargement; but it was difficult to say whether the enlargement was more intimately connected with the prostate or with a fasiculus of the muscular coat of the bladder.

In the second class are 45 cases, which may be considered normal in condition, and which give—

	Minimum.	Maximum.	Medium.
Age	60	94	76·2
Weight	4 drs.	6 drs.	4 drs. 57 grs.

None of these cases suffered from urinary obstruction connected with the prostate during life, although the bladder was often found fasci-

culated. In 12 of these, circumscribed tumours were observed, for the most part only slightly developed; in 3, the posterior lobe was slightly enlarged; in 1, abscess was present, the consequence of general paralysis.

In the third class are 35 cases, which give—

	Minimum.	Maximum.	Medium.
Age	60	87	75·2
Weight	6 drs. 15 grs.	48 drs.	15 drs. 2 grs.

In 17 of these, the enlargement affected both lateral and posterior lobes; in 14, the enlargement existed chiefly in both lateral lobes; in 1, the enlargement affected only the left lateral and posterior lobes; in 1, enlargement preponderated in the left lateral and posterior lobes; in 1, enlargement preponderated in the left lateral lobe; in 1, enlargement preponderated in the posterior lobe. Thus it appears that 35 per cent. of all prostates after the age of sixty are abnormally large, 20 per cent. are abnormally small, and 45 per cent. are within the limits of the normal weight. This enlargement is principally caused by increase of the fibrous element of the body; the glandular also being increased in amount, but not to the same degree. The new fibrous tissue is deposited in concentric layers, and so forms circumscribed tumours. The frequency of this fibrous deposit is shown by the fact that it was present in 34 out of 35 cases of enlargement, in 27 of which it was found in the form of tumours; in 7 there was no appearance of tumours. It also appears that those glands in which the tumours are marked are liable to the greatest enlargement, as some thus affected were found to weigh 30 drs. and even 48 drs., while those in which the tumours did not appear never weighed more than 17 drs.

A comparison of the relative frequency of enlargement of the different parts of the gland shows that the lateral lobes are much more liable to be affected than the posterior; 34 of 35 cases were affected in their lateral lobes, while only 19 of the same number were affected in the posterior lobe. It is rare to find the posterior lobe enlarged while the rest of the gland is normal; only 1 such case in 35 was found. Enlargement of the posterior lobe is the chief cause of obstruction to the flow of urine; but that may also be the consequence of hypertrophy of the lateral lobes, especially when it takes the form of tumours, and they project inwards upon the urethra.

It appears from the nearly equal average age in all three classes, that the condition of the prostate does not materially affect the longevity of the individual. A slight difference does, however, exist in favour of those in whom the gland is most nearly normal, the average in these being 76·2, and in the enlarged 75·2.

The presence of abscess in the prostate produces enlargement to a greater or less extent; seldom, however, to the same extent as fibrous deposit. The most frequent cause of abscess in the prostate appears to be obstruction to the flow of urine, either from stricture of the urethra, enlargement of the prostate, or the consequence of paralysis of the bladder. The frequency of abscess in the enlarged gland is in the proportion of 5 in 35; in those between 4 drs. and 6 drs., 1 in 45; in those under 4 drs., 1 in 20. The causes in these cases were—

stricture of urethra in 3 cases; frequent retention in 3 cases; paralysis of bladder in 1 case. Tubercle is the only other abnormal deposit giving rise to enlargement of the prostate noticed in these cases, and that only in 1 case, which weighed 24 drs. A similar deposit was observed in the lungs, right kidney, and mucous coat of the bladder in this subject.

It is worthy of remark that while retention of urine, more or less complete, is the most important symptom and consequence of enlarged prostate, it is not found in every case. The proportion of men in advanced years suffering from the consequence of enlarged prostate is indeed small. Thus, amongst 1600 old men, with an average sick list of 200, not more than 10 are under treatment for this disease, and half of these only occasionally. A much larger number must be affected with enlargement, as shown by post-mortem examinations of the gland. In 35 cases of enlargement found after death, 13 suffered no urinary symptoms during life, and 2 others only after the occurrence of serious lesions to the nervous system shortly before death. Although many of these cases were not greatly enlarged, some of them plainly showed that the prostate may be greatly altered, and yet the patient be free from urinary obstructions, as in 1 case, where the prostate weighed 8 drs. 30 grs., with prominent enlargement of the posterior lobe; in another, which weighed 19 drs. 30 grs., with general hypertrophy and great encroachment on the urethra; in another which weighed 26 drs. 30 grs., with the enlargement principally seated in the lateral lobes.

On considering the favorable circumstances for the formation of phosphatic calculi in cases of enlarged prostate, it is surprising that these concretions are not more frequently found. Of the 35 cases of the third class, phosphatic calculi were found in two, the largest weighing 7 drs. 45 grs.; in another, two uric-acid calculi, of about 30 grs. each, were found.

ART. 132.—*On Diseases of the Prostate Gland.* By Dr. JAMES STANNUS HUGHES, Surgeon to Jervis Street Hospital.

(*Pamphlet*, 12mo, London and Dublin, 1860, pp. 63.)

This pamphlet is a reprint of the clinical lectures originally published in the 'Dublin Medical Press.' The diseases treated of are those which are most frequently met with in practice, viz., acute prostatitis, chronic prostatitis, irritable prostate and senile hypertrophy of the prostate, the others being reserved for future consideration. Dr. Hughes believes that, in many cases, great relief is produced by applying leeches to the rectal surface of the prostate, or by scarifying this organ from the same quarter; and to facilitate this mode of treatment, he describes a new instrument for the application of leeches, and a new concealed prostate lancet, both of which promise to be of much service.

Art. 133.—*On the nature and treatment of Prostatorrhœa.* By Professor Gross, of Philadelphia.

(*North American Med.-Chir. Review*, July, 1860.)

Prostatorrhœa is defined to be a discharge from the prostate gland, generally of a thin mucous character, dependent upon irritation, if not actual inflammation, of the component tissues of that organ. It has generally been confounded with other lesions, as gleet, or chronic urethritis, seminal losses, and cystorrhœa, or chronic inflammation of the mucous membrane of the bladder. It does not often occur among children or old people, but is most common during the activity of the sexual organs, and is most frequently met with in those whose sexual propensities are the strongest. The exciting causes are not always evident, but the disease has generally been traceable, either directly or indirectly, to venereal excesses, chronic inflammation of the neck of the bladder, stricture of the urethra, or some affection of this canal; it may have its origin in diseases of the rectum, and the use of internal remedies, as cantharides, turpentine, may excite a temporary prostatorrhœa; a common cause in young men is masturbation. The *symptoms* are a discharge of mucus, generally perfectly clear, ropy, varying from a drachm upward in twenty-four hours; in efforts at defecation the flow is greatest. It is attended, also, with a pleasurable, tickling sensation sometimes. Prostatorrhœa may be distinguished from urethritis by the gradual supervention of symptoms, the transparency of the discharge, the absence of symptoms of inflammation of the urethra, &c.; from spermatorrhœa, by a microscopical examination of the discharge; from cystorrhœa by the absence of changes in the urine, or difficulty in micturition. The *pathology* of this affection consists in a disorder of the follicular apparatus, leading to an inordinate secretion of its peculiar fluid. This may be due to inflammation, but in some instances the organ appears to be entirely healthy, in which case it is supposed to be due to a heightened functional activity. The *prognosis* is generally favorable, as this affection is not a disease, but a symptom of disease, usually slight, and easily removed; it is often, however, very obstinate, and when the mind deeply sympathises with the local affection is very difficult of management. The *treatment* should be directed to the removal of the cause, and to this end there should be a thorough exploration of the genito-urinary apparatus, the anus, and the rectum, and a careful inquiry as to the habits of the patient. If he is weak, gentle exercise, nutritious diet, wine and tonics are indicated. The tincture of the chloride of iron in union with tincture of nux vomica is especially recommended; if he is plethoric, the antimonial and saline mixture is useful; the most useful topical applications are cooling and anodyne injections, as Goulard's extract with wine of opium in the proportion of one or two drachms each in ten ounces of water, three times daily; in obstinate cases, cauterization once a week may be necessary; the cold hip-bath is also important, and if the symptoms do not yield, leeches should be applied around the anus and to the perinæum.

ART. 134.—*Reasons for regarding Gonorrhœal Rheumatism and Ophthalmia as simply Urethral Rheumatism and Ophthalmia, &c.* By Dr. ELLIOTSON.

(*Medical Times and Gazette*, June 30, 1860.)

"My first knowledge of the disease in question," says Dr. Elliotson, "was obtained from Sir Astley Cooper's lectures, which I attended at St. Thomas's Hospital in 1806-7, and 1807-8. How many years previous he had mentioned or seen it, I cannot say. He pretended to no merit of discovery, but related, in the most artless manner, the communication of the facts to him by a patient. 'An American gentleman,' he said, 'came to me with the clap, and I told him he might think himself well off to be so little affected. "Oh," said he, "a clap with me is a serious thing. When I had it before, I was attacked a few days after the infection with an obstinate inflammation of the eyes that was followed by rheumatism." I thought,' continued Sir Astley, 'that he might have caught cold while taking mercury; but he said he had taken none. I therefore watched the disease; and in a few days his eyes became inflamed; and after that one of his knees swelled, and then the other became affected with chronic inflammation. He was attended by Dr. Relph, of Guy's Hospital, and myself, for many months. He left this country uncured; but I heard that he got well on his voyage. Since this case I have seen many more such.'

"It was very natural to suppose, before our experience became enlarged, that the disease was the result of gonorrhœal contagion; and the appellation gonorrhœal rheumatism, given naturally to it from its alliance with gonorrhœa, must have increased the tendency to this view. We cannot wonder, therefore, at Sir Astley Cooper believing that the ophthalmia was produced, not indeed by the application of gonorrhœal secretion accidentally to the eye, as may happen with any careless patient, but still by the absorption of it into the system, and that the proper treatment of the rheumatism, produced to his view of course by the same poison, was the same as of gonorrhœa—half a drachm, according to him, gradually increased to a drachm, of copaiba, with spirits of turpentine, three times a day. We have no specific remedy for gonorrhœa, any more than for measles, scarlatina, or smallpox; and those drugs must in many cases aggravate gonorrhœa; and they would aggravate many cases of the rheumatism. Copaiba, cubebs, and some analogous drugs, are useful occasionally in gonorrhœa, but not more so than in similar uncontagious affections of the genital passages, and possibly of some other mucous membranes. If there is no reason to ascribe specific powers over gonorrhœa to them, neither is there any to conceive that they can be remedies of the rheumatism bearing the distinction of gonorrhœal. Nor are they.

"The belief, now generally prevalent, of the rheumatism in question—rheumatism with urethral discharge—and indeed of the ophthalmia, being really the product of gonorrhœal poison, is, I am satisfied; as unfounded as the previous generally prevalent disbelief that rheumatism and ophthalmia are ever connected with gonorrhœa. It was long before this struck me; for I had always read of those forms of disease,

and heard them spoken of, with the epithet gonorrhœal; and had not seen them except in gonorrhœal patients. After a time I received the assurance of one or two patients that the affection of their genitals could not have arisen from infection; but it made no impression upon me, because I am familiar with the untruths which are often told upon these subjects, and because patients do really sometimes fondly deceive themselves as to the character of those with whom they intrigue. But, as years passed on, more instances of the alleged impossibility of infection presented themselves to me; and some such patients, I felt certain, could have no reason to deceive me, were too much endowed with self-respect to stoop to an untruth, and were too acute to be themselves in error. Some have told me this long afterwards, when they had ceased to incur the possibility of catching any disease of the genital organs. I knew no one inclined to this view till five years ago, when, accidentally meeting with a surgeon, a married man and a father, who had consulted Sir Astley Cooper and myself twenty years at least previously for what we had all termed gonorrhœal rheumatism, and since which time I had not heard of him, I was told by him that, before he married, he had again suffered a few attacks of rheumatism and urethral discharge, on which occasions the idea of infection was altogether out of the question, as he had not been exposed to the possibility of risk. At this period he had no inducement to deceive me as to his former life; and formerly he had always been candid when suffering for irregularities. He added, that since his marriage he had occasionally suffered in the same twofold manner as when he was irregular and single. I was much pleased, and I communicated to him that my convictions of these affections being improperly termed gonorrhœal was as strong as his own. Farther experience, up to the present moment, has set the question completely at rest in my mind. Indeed, although the circumstance is not noticed by the Profession, some writers clearly entertain this opinion, and state facts which establish it, and yet lay no stress upon its difference from the commonly received views. I have just found that Sir Benjamin Brodie, in his 'Pathological and Surgical Observations on Diseases of the Joints,' published in London in 1818, gives five cases of the disease witnessed by himself; and remarks that in one the patient could not ascribe the discharge to infection, and in another the patient suffered from strictures in the urethra, and, although rheumatism took place twice with gonorrhœa, it took place twice also when there was no gonorrhœa, but the urethra was in a state of irritation and discharge through the mere introduction of bougies employed on account of the strictures. He therefore says that it may occur without infection. Brandes also considers that the rheumatism may be re-excited after all gonorrhœa has ceased, if the urethra is irritated by any common cause; and speaks of this rheumatism as *blenorrhagique* (gonorrhœal) and *traumatique* (such as from the introduction of a foreign body into the urethra). Marechal gives a case of rheumatism, long continued and with all the other characters of gonorrhœal rheumatism, that had followed an urethral discharge produced by nothing but the immoderate use of new beer, and such as had never occurred in the man before.

"My own experience, extending through so many years, render sit

impossible for me to doubt that specific and contagious nature is unnecessary to the urethral irritation which in certain persons gives rise to rheumatism and to ophthalmia also in others—that the mere irritation is sufficient, and in fact is the cause, and that the gonorrhœal, contagious, character is incidental only. The combination of the cases of other writers with my own will, I hope, settle the question. The *single* case of syphilitic infection of a lady by secondary symptoms in the hand of her maid, recorded by me in the 'Medical Times' of September 4th, 1858, removed all possibility of farther doubt respecting the occurrence of infection from secondary sores. The determination of the production of rheumatism by simple urethral irritation is effected by the *repeated* experience of many of us continued through a large number of years. The impediment to the perfect knowledge of what is known as gonorrhœal rheumatism was its extremely rare occurrence among the instances of rheumatism at large on account of the comparatively small number of persons affected with irritation of the urethra, and the still smaller number of persons among these that have the unfortunate peculiarity of liability to rheumatism from it. The impediment to the knowledge of simple irritation of the urethra being the cause was still greater on account both of the great rarity of simple, compared with gonorrhœal, irritation of the urethra; and of very few individuals indeed being the subjects of both simple urethral irritation and liability to rheumatism from irritation of the urethra. Those who from habit regard this kind of rheumatism and ophthalmia when allied with gonorrhœa as therefore gonorrhœal, must remember that in every case of gonorrhœa there are two circumstances united—the irritation of the urethra and the specific nature; and that the latter cannot exist without the former, although the former may exist without the latter. Consequently, no case of gonorrhœal rheumatism or ophthalmia proves that the rheumatism or ophthalmia depends upon the specific—the gonorrhœal—nature of the urethral affection, and not upon the irritation irrespective of specific nature.

"A little experience of this rheumatism impressed me, as it has done many others, with certain characteristics, and I detailed them in clinical lectures above twenty years ago. 1. I saw and see it so frequently in the feet that, whenever a rheumatic man has walked into my library lame from rheumatism of his feet, I have startled him with the question how long he had been suffering under gonorrhœa. It not unfrequently affects the hands, perhaps, as I once saw, a single joint only; the wrists and elbows; but the lower extremities most frequently, the knees as well as the feet; the hips also. It may affect any joints, and several at one time or in succession; the loins also and back of the neck. I saw it once in the joint of the jaw. 2. Its obstinacy and extreme duration are remarkable. The longest case I ever saw was in the jaw, and after two or three attacks imperfect rigidity, I believe, became permanent. 3. I am not aware of ever having seen it in a female. But gonorrhœa is comparatively rare in women, as one loose female contaminates scores of men, and, however great the number of loose women, the number of men who have been occasionally loose is almost equal to the number of all men. 4. But the most important and perhaps an invariable point in its character,

is its inflammatory nature at first, and for a very considerable time. This struck me before I had seen many instances of the disease, and I did not find that it had been noticed. But Sir Benjamin Brodie, whose book upon diseases of the joints I had never seen, had possibly made the same remark; for previously, in fact above twelve years before I was aware of witnessing the disease, he had written that colchicum was the best remedy for it; and the great utility of this medicine against rheumatism I believe to be in the inflammatory form. Not only is the disease, but its inflammatory nature, disposed to continue very long. Yet at length, after a long period, the time may arrive when the iodide of potassium, tonics, and general and topical stimulants are the suitable means; and forcible extension of the joint may be proper. Till that time arrives, the treatment should consist of *patient abstinence from fermented and distilled liquids and flesh food*, the removal of external stimulants, rest, and a position which favours the presence of as little blood as possible in the affected part or parts, the discreet use of colchicum and other purgatives, and the repeated application of leeches. The same kind of treatment is suitable to the ophthalmia, which, however, is seldom so obstinate. I believe that the rheumatism occurs in general earlier than the ophthalmia; it often occurs alone, and there may be differences in these two particulars in the same individual in different attacks. 5. These two affections bear no relation to the intensity of the urethral. The smallest discharge will produce the rheumatism, and perhaps the ophthalmia likewise, in the predisposed; nor is the intensity or duration of these in proportion to the degree of the urethral; and they, or one of them, may continue after the urethral. 6. I have known several persons suffer from gonorrhœa more than once without either of these consequences, and then become subject to them; but only one individual escape an attack of rheumatism after every occurrence of gonorrhœa when once rheumatism had followed the appearance of urethral discharge. I have seen the predisposition to this urethral rheumatism in several men of the same family, whether the irritated state of the urethra was gonorrhœal or not.

"The predisposition is a great misfortune, because, as soon as the urethral affection begins, the patient feels certain of an attack of chronic rheumatism; and, though it may take place in a few days, it may not for a considerable time, but is sure to come; and the mildness of the urethral affection does not foretell a mild attack.

"I will finish by relating two cases—one illustrating the benefit of employing the living hand in treating urethral rheumatism, the other the power of rigid abstinence in diet to prevent it.

"M. C—, æt. 29, a married man with a young family, living at No. 25, C—— G——, got wet while affected with gonorrhœa, and was seized suddenly out of doors with rheumatism. He became crippled, and could walk only with two sticks, for the parts attacked were his hips, knees, and soles of the feet. His eyes became inflamed. He took a large quantity of medicine, and his medical attendant honestly told him that drugs would do him no good. When he had thus suffered for four months from rheumatism, the eyes having recovered, it was resolved to try the effect of merely drawing a hand very lightly,

slowly, and straight, along the affected parts for half an hour daily. This treatment was commenced on September 24th. In a fortnight his pain was lessened; in another fortnight so great was the improvement that he could walk a considerable distance; in another he declared himself nearly cured; and before the end of another he was well and able to work. Without this treatment he, no doubt, would have been crippled till at least the end of the year.

"Although the disease was excited by cold and wet, yet, as the man was labouring under gonorrhœa at the time, he will henceforth probably be attacked by rheumatism whenever he catches a gonorrhœa. The case is interesting as affording an example of urethral rheumatism originating from ordinary exciting causes during the urethral affection, for in general these have not been noticed in the first attack, and certainly are not requisite for the production of subsequent ones.

"The other case is most important. A married gentleman had laboured under very obstinate rheumatism of the feet from his last two contractions of gonorrhœa. I had no doubt that this would occur now as often as he caught a gonorrhœa, and I begged him to let me see him as soon as ever he found he had contracted it again. He did so a year ago, and I immediately prevailed upon him to *abstain entirely* from all fermented and distilled fluids and every description of flesh food. He strictly obeyed my injunctions for several months, and has perfectly escaped rheumatism, although the urethral discharge continued slightly all the time in spite of injections weak and strong and of all kinds, for, although he lived low, it was not in his power to refrain from walking."

ART. 135.—*On the treatment of Gonorrhœa by injection of Tris-nitrate of Bismuth.* By Mr. DE MÉRIC, Surgeon to the Royal Free Hospital.

(*Lancet*, May 12, 1860.)

This mode of treatment has been highly lauded in Paris, and Mr. De Méric's object has been to test its real value. The experiments were conducted at the Royal Free Hospital. No internal medicines were given, and the proportions employed for the injections were gradually carried from half a drachm to a drachm of the insoluble salt per ounce of water. A special register of the cases was kept, from which it apears that, out of 140 patients who had used the injections, a great number were still under treatment, and a good many had attended irregularly, so that positive results were obtained only in 52 cases: out of these, 36 patients are noted as cured; 5 as much better; and 11 as not improved at all. The cures—viz., the cases in which the discharge completely ceased—were obtained in twenty-two days, on an average; the partial cures took place on an average of twenty days; and the unsuccessful cases remained under the bismuth treatment for twenty-five days on an average, being then put, with good results, on the copaiba-and-cubebs mixture. Mr. De Méric also

alludes to some cases in private practice; to the proportion of swelled testicle, buboes, and other complications which had been observed in the hospital cases; to the symptoms observed during the use of the injections; to the risk of strictures, &c., &c.; and concludes by stating that he is by no means wishful to extol the use of the trisnitrate of bismuth in gonorrhœa, though he considers it very useful, especially in gleet.

Art. 136.—*On a rare variety of Hydrocele.* By M. Velpeau.

(*Lancet*, June 30, 1860.)

At one of the recent meetings of the Academy of Medicine, M. Velpeau, who held in his hand a small phial full of a milky-looking fluid, drew attention to what he supposes to be a rare variety of hydrocele, as yet undescribed by any author, but which M. Velpeau has already met with on a former occasion, now about fifteen years ago, at which time he also introduced the subject to the notice of the Academy, and regretted to say that no satisfactory analysis was ever made of the fluid. The milky liquid now exhibited formed part of the contents of a cyst of the testicle tapped by the professor that morning in the wards of the Charité. The history of the affection shed no light on the nature of the complaint. The patient, a robust man, aged forty-five, in the enjoyment of good general health, had noticed an enlargement at the back and lower side of the right testicle for three years past; this had slowly progressed, without pain or inconvenience, until the moment of his admission into the hospital. "So far," said M. Velpeau, "the symptoms seemed in favour of hydrocele; but the absence of the surest diagnostic, translucency, puzzled me not a little." M. Velpeau's object on this occasion was, to solicit a careful chemical analysis of the morbid product with a view to ascertaining its exact character.

M. Charles Robin, to whom a portion of the fluid had been committed for microscopical examination, stated that it seemed to him to be identical with the seminal discharge obtained from patients labouring under double epididymitis, in containing all the usual elements of this secretion *minus* the spermatozoa, which last were replaced by certain white corpuscles, and to the presence of these the lactescent appearance was most probably attributable. These corpuscles possessed, he added, the same specific gravity as the liquid in which they were contained, and on repose neither rose to the top nor sank to the bottom of the containing vessel, but remained suspended in the fluid medium, as an insoluble drug in a well-made emulsion.

Art. 137.—*New operation for Phimosis.* By M. Ridreau.

(*Journ. of Pract. Med. and Surgery*; and *Dublin Hospital Gazette*, Aug. 1, 1860.)

The well-known operation for phimosis, practised by M. Ricord, leaves scarcely anything to be desired under ordinary circumstances,

at least in the opinion of the majority. Some, however, object to the permanent exposure of the glans which so extensive a removal of the foreskin entails. To meet the views of surgeons holding this opinion, we quote the description of an operation, designed and successfully practised by M. Ridreau, a French military surgeon.

"Stretch the prepuce by drawing the mucous membrane forward, and the skin back, so as to lay bare the orifice of the foreskin; introduce a slender cylindrico-conic wooden rod into the aperture of the prepuce; perform a circular incision at about half a line from the mucous margin, dividing the skin only, which immediately shrinks backward on the glans; maintain the mucous lining upon the wooden rod, and remove circularly a sufficient quantity of it to give free play to the glans in the aperture resulting from the operation. Join the edges of the wound of the skin and of the mucous membrane by a few small needles and twisted suture. If a vessel bleeds, apply one of the sutures on that spot."

The wound heals in a few days with water dressing, and then the condition of the organ is perfectly normal, the glans being covered or exposed at will. Examination of the anatomy of the parts explains the success of this operation. The constriction is seated in the mucous membrane, and this is removed. Moreover, the skin of the penis unites with the mucous membrane, not by a diminution of its substance, but by accommodating itself by numerous wrinkles (in the usual manner of skin surrounding the sphincters) to the destined aperture; accordingly, the moment it is divided circularly, it may, without difficulty, be drawn back upon the penis. This operation possesses advantages peculiar to itself; a very limited portion of the textures is removed, a covering for the glans is retained; no deformity results; the cicatrix is linear, so imperceptible as to be mistaken for the natural junction of the skin and mucous membrane, and is entirely concealed when the prepuce is drawn forward upon the glans; the portion of mucous membrane removed being replaced by integument.

(c) CONCERNING THE UPPER EXTREMITY.

ART. 138.—*Contributions to the Pathology of Dislocations at the Shoulder-joint.* By Mr. FLOWER, Assistant-Surgeon to the Middlesex Hospital.

(*Proceed. of the Royal Med. and Chir. Society*, June 12, 1860.)

The object of this paper is to reconcile the discrepancies and correct the errors which are found in the descriptions of the dislocations at the shoulder-joint given by most English and foreign surgical authors. In the endeavours to accomplish this object, three methods of investigation are adopted:

1. An original examination of the symptoms of recent examples, and of the published records of cases.

2. Experiments upon the dead subject.

3. Examination of all the specimens which illustrate the subject preserved in the anatomical museums of London.

A table is appended of thirty-two recent cases, contributed by house-surgeons of several London and provincial hospitals, according to a form drawn up by the author; the principal aim having been to obtain an accurate record of the symptoms, with measurements, in a number of cases in which the exact position of the head of the humerus, so far as it could be ascertained by external examination, was established. An account of the examination of forty specimens of dislocation at the shoulder-joint, contained in the various anatomical museums in London, formed the second table. In entering upon this part of the investigation, care is taken to exclude cases that may have been the consequence of disease; and, with this view, the differential characters of the changes produced by chronic rheumatic arthritis and by unreduced traumatic dislocation are pointed out.

The general results of the inquiry are given in observations upon some of the special forms of dislocation, of which the following are the most important:

1. *Subglenoid.*—"Downwards and forwards; the head of the humerus placed in front of the inferior costa of the scapula, below the glenoid fossa." The cases contained in the appended tables appear conclusively to confirm the observations of Malgaigne, and the modern French school, that this form of dislocation is comparatively rare—an opinion opposed to that of the majority of English, German, and earlier French authors. Of the thirty-two recent cases in Table 1, five are assigned to this variety; and of the forty specimens in Table 2, but three, even if one were included which was properly an intermediate form, between this and the subcoracoid; in all, eight out of seventy-one. The author says it is difficult to understand how the widespread error of regarding the subglenoid as the typical form of dislocation at the shoulder-joint should have been so long maintained. A simple process of reasoning upon the anatomical structure of the part would suffice to show that, whenever the humerus is thrown from its socket, it will, almost of necessity, be drawn upwards until it is arrested, either by the coracoid process in front, or the spine or acromion behind. Even in the dead subject, when the humerus is dislocated by fixing the scapula and forcibly elevating the arm, it is almost always drawn up close against the under surface of the coracoid process; *à fortiori*, in the living, must the action of the deltoid, coracobrachialis, and biceps cause it to assume this position. In fractures about the neck of the humerus the action of these muscles in raising the lower fragment has long been recognised.

2. *Subcoracoid.*—"Forwards and slightly downwards; on to the neck of the scapula, in front of the glenoid fossa, and immediately under the coracoid process." Under this term are included two varieties, which Malgaigne considers distinct, and designates respectively "subcoracoid" and "intracoracoid." The author observes that, although there are doubtless characters by which well-marked

cases of either can be determined, the difference between them is slight, and being rather of degree than of form, there seems no practical advantage in retaining it in our classification. The anatomical characters of this form of dislocation, when recent, are fully described in the paper, as are also the changes which take place in the ends of the bones when left long unreduced, the latter being illustrated by a diagram. The causes of subcoracoid dislocation, as illustrated in the twenty-seven cases in Table 1, are as follows:—Direct falls upon the shoulder in eleven, upon the elbow in four, upon the hand in five; while in seven cases the cause is of exceptional or doubtful nature. Symptoms: The arm was elongated in ten, unaltered in six, and shortened in eleven; the greatest elongation being one inch, the greatest shortening seven eighths of an inch. The vertical circumference of the shoulder was increased in all. The elbow in every case projected more or less from the side, was directed backwards in eight, forwards in nine, and in the middle line or in a position not recorded in ten. The arm was rotated somewhat inwards in seventeen, outwards in three, and either unchanged or net recorded in seven. In about half the cases the head of the bone was felt in the axilla, without moving the arm from the side; in the other half, only after the limb was abducted; but in all the head of the bone was felt through the anterior wall of the axilla, either immediately or not more than half an inch below the coracoid process, the only real diagnostic sign of this injury.

3. *Subclavicular.*—"The head of the os humeri placed below the middle of the clavicle, and on the sternal side of the coracoid process." The frequency of this form of dislocation has been much overrated in consequence of the subcoracoid not having been recognised as a common variety. A dislocation that was not subglenoid was supposed necessarily to be subclavicular. The cases in which the position of the bone exactly corresponds with the above definition of Sir A. Cooper must be very rare indeed, although there are a sufficient number on record to prove the existence of this as a distinct variety. There is no preparation in any of the London museums which shows it.

In conclusion, the author states that all original and unbiassed observation seems to point to the subcoracoid as the typical position of the head of the bone in traumatic dislocations of the humerus, and a general recognition of this fact would, in his opinion, be an important step in the process of eradicating many of the difficulties and errors in which the pathology both of the injuries and diseases of the shoulder-joint had hitherto been involved.

ART. 139.—*A case of Dislocation of the Ulna forwards at the Elbow, without fracture of the olecranon process.* By Mr. CANTON, Surgeon to the Charing Cross Hospital.

(*Dublin Quarterly Journal of Med. Science*, Aug. 1860.)

So rare is dislocation of the ulna forwards at the elbow-joint without a simultaneous fracture of the olecranon process, that many authors have denied the possibility of its occurrence. About the following case there can be no doubt.

CASE.—F. P—, æt. 40, a somewhat short, slim-built, but muscular man, while driving in a light cart at the rate of seven or eight miles an hour, was thrown out, and instinctively extended his right hand to prevent injury to his head. The weight of the body, however, caused sudden and forcible flexion of the elbow, and at the same time the forearm became twisted in under the chest. On rising, it was found that the elbow was considerably swollen, and the power of moving it entirely lost. When admitted into hospital, the forearm was forcibly flexed, and the hand supinated. The swelling, ecchymosis, and tension around the elbow were so great that it was with difficulty any of the more salient anatomical peculiarities of this part could be recognised—everything appeared, in every way, so disarranged. The skin covering the inner condyle was stretched to the utmost, and here, over a space about the size of a sixpence, it was to such a degree injured that a compound state seemed to be momentarily threatened. The antero-posterior and lateral diameters of the joint were increased in extent, and the general swelling was so great as to present a circumference far beyond the normal size of this region. Externally and somewhat anteriorly the cup-like cavity of the radius could be indistinctly distinguished; internally, the condyle was unduly prominent; anteriorly, no particular point for diagnosis could be determined on, on account of the state of forcible flexion and great tumefaction there; posteriorly, also, the swelling was very considerable, but, below it, there existed a depression favouring the view that the ulna was broken immediately below its olecranon process. No median gutter, with lateral elevations to bound it, could be felt.

Attempts were made to rectify the mal-adjustment, but without success; the efforts, however, could not be longer continued, for it was obvious that the injury already sustained by the soft parts was so extensive, the obstacles to be overcome so resistent, and the great likelihood incurred of rendering the case one of the compound kind, forbade further trial, and it was agreed, in consultation, to place the limb at rest on a splint, and to keep the parts cool with an arnica lotion. Within the course, however, of forty-eight hours the tumefaction became still greater; a large slough was forming on the inner side of the joint, and high constitutional irritation having set in, I was obliged to amputate the limb at a sufficient distance above the articulation.

Dissection.—A very careful examination of the elbow was made, under my superintendence, by my pupil, Mr. Edgar Browne, with the following results:

Bones.—The ulna was dislocated forwards, so that the upper surface of its olecranon process became placed in front of the capitellum humeri, and had thus assumed the position naturally occupied by the head of the radius during flexion of the forearm. The radius was supinated, and maintained *in situ naturale*, as regards the ulna, by the coronary and interosseous ligaments being intact.

Ligaments.—Of the anterior ligament, the only part remaining at all perfect was a shreddy portion about the centre; all the rest of it had been torn through. The posterior, and both lateral ligaments were completely divided. The coronary and oblique ligaments were uninjured.

Muscles.—The triceps extensor was detached from all its points of insertion. The supinator radii longus was uninterfered with at its origin; but the two radial extensors of the carpus beneath it were torn away from the surfaces whence they spring. All the muscles which arise from the external condyle, with the exception of the supinator radii brevis and anconæus, were detached from this process. The only muscle that was torn through at its origin from the internal condyle was the flexor carpi ulnaris—the olecranon and ulnar portions of it, however, continued intact. No mischief whatever had happened to any other of the pronators and flexors. The biceps and brachialis anticus were put greatly on the stretch.

Blood-vessels.—Though much shifting of their position had necessarily taken place, no vessel of large size had been injured; the sacrifice, however, of smaller ones must have been great, judging from the large amount of blood with which all the soft textures were infiltrated.

Nerves.—The ulnar nerve was torn across where it passes behind the inner condyle. The sheath of the median was distended, and its substance permeated with blood. The other nerves uninjured.

(D) CONCERNING THE LOWER EXTREMITY.

ART. 140.—*On Coxo-femoral Disarticulation in relation to Military Surgery.* By M. LEGOUEST.

(*Med.-Chir. Review*, Jan., 1860.)

After the battles of the Alma and of Inkermann this operation was performed upon thirteen patients, all of whom died. The case of one of these, a Russian prisoner, is related at some length by the author. He was very nearly being saved, when he had a fall upon his stump, and was carried off by diarrhœa, owing to his being placed amid a large assemblage of patients confined to a small space, many of whom were the subjects of scorbutus, hospital gangrene, or purulent infection, and almost all were suffering from diarrhœa, dysentery, or cholera. This approach to success has given the author little desire to repeat an operation the value of which, he says, is much less in the eyes of the surgeon than in those of the public; and he thinks its performance should be reserved for organic diseases of the femur incurable by any other means. He has endeavoured to collect all the instances in which this operation has been performed after gunshot injury. In thirty of these the operation was *immediate*, the whole dying; in eleven it was *mediate*, eight dying and three recovering; and in three it was *ulterior*, two dying and one recovering. Of the first category, some died during the operation itself, others soon after they had been carried to their beds, and all within ten days, except two patients, related by Larrey, one of whom lived twenty-one and the other thirty days. Should not an operation furnishing such results be positively interdicted? The proportion of three recoveries in eleven mediate operations is, on the other hand, a large one, especially when we consider the mortality from

amputation of the thigh,—and probably arises from the fact of all the unsuccessful cases not having been made known. Ulterior operations —*i. e.* those performed about a year after the accident—have succeeded once in three times, analogous as they are to the amputation necessitated by disease of the femur. Now, can this slight amount of success, which is not even so great as it seems, be compared with the results derived from attempts at the preservation of the limb? Unfortunately, many surgeons, almost in spite of themselves, lay more stress upon a successful case of operation than upon a recovery obtained by assiduous care, and by an ingenious combination of all possible appliances, independently of cutting instruments. The success of a dangerous operation is willingly published, while the more humble but more precious triumphs of conservative surgery are unrecorded. This is the case with most of the instances of fracture of the cervix or the trochanters which have been treated with preservation of the limb. M. Legouest has, however, here collected six instances, one of these having occurred in Larrey's practice, another in Sédillot's practice, and four in his own. Of these six patients, three lived; while in forty-four cases of amputation of the thigh, recorded as having been performed by skilful surgeons, and from which all doubtful cases have been eliminated, scarcely can four cases of authentic cure be discovered.

The practical conclusions he arrives at are, first, that all immediate amputations—*i. e.* before the early phenomena of suppurative inflammation set in—should, as laid down by Sédillot in 1841, be rejected. At all events, every effort should be made to obtain some delay. When an operation has to be performed, on account of gunshot wound of the femur, without lesion of the vessels, with large splinters that cannot be extracted, an amputation through the trochanters, or immediately above them, is preferable to disarticulation. This operation does not deserve the proscription that has been directed against it. The wound is smaller and less deep, and the head of the femur remaining in the normal position, if it does not diminish the danger of the operation, facilitates the subsequent application of prothetic apparatus. When, too, there is intra-articular fracture of the cervix, or fracture of the head of the bone itself, resection of the upper part of the femur should be preferred to disarticulation. This operation has now been performed in twelve or fourteen cases, and in more than a third it has succeeded. It is true that it failed in the two cases of gunshot fracture it was tried in; but how many times had coxo-femoral disarticulation been attempted before four authentic recoveries could be recorded? Complete ablation of the limb should be reserved for cases of fracture with lesion of vessels, for if these remained intact, resection should be preferred. To sum up: in ordinary cases—which are by far the most numerous—we shall derive more advantage from preserving than from removing the limb; and when an operation is determined upon, we shall defer it to the latest period consistently with the general condition of the patient.

ART. 141.—*On the treatment of certain diseases of the Hip-joint by complete and partial excision of the articulation.* By Mr. PRICE, Surgeon to the Great Northern Hospital, &c.

(*Lancet*, April 28, 1860.)

Great difficulty always exists in the correct appreciation of hip-disease, when it has passed its earliest stages, as regards the exact seat of lesion. Sir A. Cooper believed that the synovial membrane, as a rule, was most frequently affected. Mr. Key held that the ligamentum teres was primarily involved. Sir B. Brodie states that the articular cartilages exhibit a greater proneness to take on a morbid condition; while other surgeons think that the osseous portions show the greatest tendency to diseased alterations. No matter in what specific structure unhealthy action commences, the author believes that total destruction of the articulation may take place, although the various destructive changes that ensue are dependent on different causes. Disease of the joint may originate in one structure only, or it may simultaneously include both hard and soft tissues.

Before pointing out the various morbid changes occurring in the later forms of hip-joint disease which call for the most strenuous exertions and skill of the practical surgeon, the author gives a very precise account of the history of the operation from the year 1818 to the present time. Altogether he has collected 67 cases in which the operation had been resorted to with more or less success. Of this number he has authenticated particulars of 59 cases, so that the deductions he draws may be received with confidence.

The history of the operation is interesting. Anthony White was the first British surgeon who resorted to it in the year 1818; but only twice was it repeated during nearly thirty years—once by Mr. Hewson, of Dublin, in 1823, and once by Sir B. Brodie in 1836. The proceeding then remained in this country quite in abeyance till revived by Mr. Fergusson in 1845, when many surgeons followed the example of this distinguished operator. Amongst its earliest advocates were Mr. Henry Smith (to whom the profession is much indebted for several clear and able practical essays on the subject), Messrs. Walton, French, Morris, and Cotton. Within the past few years, Mr. Jones, of Jersey, Mr. Erichsen, Mr. Hancock, Mr. Bowman, Mr. Partridge, Mr. Shaw, Mr. Stanley, the author, and many other surgeons, had frequently resorted to it, with more or less success. When the operation was first performed, it was merely applied to the removal of the diseased head of the femur, which had become dislocated on to the wing of the pelvis and severed from its pelvic attachments. The most enthusiastic operators shrank from adopting it when there existed evidence of implication of the acetabulum, for it never occurred to the promoters of the operation that any direct surgical interference could be applied to the pelvic portion of the joint. As time advanced, and the merits of the operation became apparent, surgeons grew bolder, and undertook cases in which extensive mischief involved not only the head of the femur, but the acetabulum. A more correct knowledge of practical pathology soon

widened the field for the application of bold and resolute interference, and now the most distressing and apparently almost hopeless cases are submitted to operation with very great advantage.

The author then proceeds to divide the further consideration of the subject into the following heads, as the merits of the operation would be more clearly ascertained when it is shown for what condition of disease the proceeding had been practised:

First. Where the diseased head of the femur is dislocated from its acetabular connexions, and no disease of the pelvis apparently existed. For this condition 16 instances are recorded. In 10 the operation was perfectly successful, as far as giving the patients useful limbs and much-improved conditions. Of the remaining 6 cases, 3 were perfectly successful, so far as the immediate results of the operation were concerned, the patients living for periods of from a few months to two years. In the other 3 instances death followed: in one case through erysipelas on the fifteenth day after operation; in the other 2 from general debility, irritation, and tubercles of the lungs.

Secondly. Where the diseased head of the femur is dislocated from the acetabulum, and more or less disease of the acetabular portion of the pelvis existed. Eighteen cases were submitted to the operation when the local parts were so involved. Of this number, only 6 positively recovered; but before allowing the great disparity of successful and unsuccessful terminations to influence conclusions, it was of importance to sift individual histories of the cases. Of the 12 unsuccessful instances, only in 5 did a fatal result follow as the direct effect of the operation, and in one it was owing to erysipelas. The remaining 6 which ultimately terminated fatally were all more or less improved by the operative measures which were adopted. In 2, tubercular disease of special organs prematurely hurried the patients to the grave; in a like number, morbid conditions of the kidney proved the direct cause of mortality; while in another instance, where health and cure were established, valvular disease of the heart proved fatal; and lastly, erysipelas carried off a patient who probably would have recovered. The success, then, in these 18 instances was not so discouraging when it was remembered that the proceeding was adopted at a period too far advanced to lead to any brighter hope of success. Here the operation was employed not solely as a curative proceeding, but as one of palliation, and it is in this light that it must be frequently used.

Thirdly. Where the diseased action is more or less confined to the synovial and cartilaginous structures of the articulation; and if the bony portions of the joint were involved, such inclusion was not of the nature of caries and necrosis. Five operations only were performed when the parts were in this condition. The author has resorted to this proceeding in 2 instances, and with much success and advantage. Out of the 5 cases, 3 were completely cured; one lived for fifteen months, and then died from causes apart from disease of the hip; but the fifth case succumbed on the twentieth day after the operation from increasing debility and irritation.

Fourthly. Where the integrity of the joint was more or less de-

stroyed, either femoral or pelvic, or both, although no dislocation or rupture of the capsular ligament had occurred. In this class are included 14 cases, of which 11 recovered with more or less useful limbs, or were on the high road to recovery; 3 died, although at periods varying from three days to three months.

Fifthly. Of those cases regarding which the author possesses no exact knowledge of the details of surgical interference. Under this heading were 5 instances, in which recovery was known to have taken place in 3 cases, and death, it was believed, in 2. Of the entire number of cases thus recorded (59), 33 recovered with good and useful limbs, and with greatly benefited constitutions; 11 were partially successful—*i. e.* the patients were greatly benefited both locally and constitutionally, and lived for periods between three months and two years, and then died more from other causes than from a recurrence of the disease which demanded interference. Fourteen deaths resulted more or less directly from the operation; but it would be unfair to say that every case did so, as the operation was occasionally performed when, perhaps, but too slight grounds really existed for any result beyond slight palliation. In one case only had the author not been able to obtain the exact result.

These 59 operations were performed, on fifty-three occasions by British surgeons, in five by American operators, in one by a French surgeon. The author does not wish to include the 8 cases which are scantily mentioned in the works of various German practitioners.

Attention is next drawn to the abnormal conditions in which the parts concerned in disease had been found at the time of operating. Considerable stress is laid on the difference between caries, properly so called, and inflamed and ulcerated bone; and also on the great frequency of a necrotic state of the bony parts in far-advanced stages of the disease, without even rupture of the capsular ligament and luxation of the head of the femur. Caries, when affecting the head of the femur, was often limited strictly to that bone; and although various surgeons had eschewed even a trial of the operation, because they believed in the certain inclusion of both femoral and pelvic portions of the joint, still the author, from what he knew after a fair amount of experience, must deny the compulsory existence of the disease in both osseous structures. Complete dislocation of the caput femoris must not be considered so frequent an occurrence of advanced hip-disorganization as some authors had stated. Although many surgeons who had never attempted removal of the pelvic portions of the joint had denied the possibility of removing such when diseased, still it is now an undoubted fact that the entire acetabulum could be taken away, when necessary, with comparative freedom. To Mr. Hancock belonged the principal merit of having clearly explained the easy way in which diseased portions of the pelvis may be removed.

The author then points out some of the principal features which should guide the surgeon in selecting cases for operation. The manner of performing the operation is detailed, and great stress placed on the importance of subsequent mechanical treatment. The result to be wished for is a limb as useful as art could contrive. Bony union of the cut end of the femur with the pelvis is to be avoided, for it

is found that consolidation and attachment by means of a firm fibrous tissue allow a very extensive use of the limb, and one amply sufficient to bear the weight of the body.

In conclusion, the author remarks that the operation has only been, as a rule, adopted on such occasions as when life was in danger, or rendered miserable by constant pain and anguish.

Art. 142.—*A case of Fracture of both Femurs by muscular spasm.* By Dr. Frederick D. Lente.

(*American Medical Times*, July 21, 1860.)

The occurrence of fracture from muscular exertion, or from the application of very slight force, in cases of the cancerous and other diatheses affecting the integrity of the bony structures is not very uncommon; but in case of healthy bones (the *long* bones) the possibility of such an accident is positively denied by surgeons of note and authority. But Samuel Cooper cites a few instances which he considers authentic, and knew of one himself. In one instance it was the *femur* which was fractured, in the case of a cabin-boy, who attempted to maintain his balance on deck during the violent rolling of the vessel, and in making a powerful effort to do so, fractured this bone without falling on the deck at all.

In the present case there was no evidence of any unhealthy condition of the bones, and the brief history preceding the date of the fracture will serve to show that they were characterised by no unusual fragility, although smaller, no doubt, than they should have been at the age of the patient, as were the muscles of the lower extremities also. What renders the case more remarkable, perhaps unique, in its character, is the fact that the bone was fractured during a *tonic* convulsion, that is, by a steady pulling of the muscles, and not by a sudden jerk, as in the other recorded cases. The spasms were always of this kind both before and after the accident.

Case.—L. L—, æt. 12. This child, a boy, was in good health until he attained the age of fifteen months, when he was attacked with some cerebral affection that resulted in *epilepsy*, from which he has suffered to the present time. His affliction has been terrible. For the first year his seizures would recur about monthly, lasting several days, with intervals of from one to two hours between the paroxysms; subsequently they increased in frequency, and he has had as many as thirty or forty during the day, of a most violent character. They continued thus for some years, he being, during that time, under charge of my predecessor, Dr. A. L. Sands, now of New York. Sometimes there would be an interval of two or three weeks between the attacks, at other times they continued for days and weeks. For the past year or two, the intervals of exemption have become longer, generally about a month, but the attacks, when they do recur, are no less violent. The effect has been, of course, to destroy the intellect of the child, his power of speech, also his locomotive power to a considerable extent. There has been partial hemiplegia of the right side for some years. His appetite and digestion have been unimpaired

during the whole of his sufferings, and his physical development has not been backward. Until a year or two ago he could stand upright, and could move about the room in a rapid, irregular manner, with assistance, using mostly the left leg; but, as he grew older and heavier, his feet became clubbed from relaxation of the ligaments, and for a long time he has not been able to stand at all; but he takes considerable exercise in his own way, throwing himself about in bed, and moving frequently from side to side, requiring constant watching. During his spasms he exerts considerable strength; in this way his limbs, his upper ones especially, have preserved considerable muscular development. His parents are healthy, as are the other children, four in number. His convulsions are always of the *tonic* variety and very severe.

On April 10th, 1859, his spasms had been recurring every few minutes with great violence; during one of them, while he was held in bed by one of the family by the arms and shoulders, a number of others being in the room, a loud snap was heard by all present. It was thought that the hip "had slipt out of place," and upon examination by the parents, what they supposed to be an extensive swelling was perceived at the upper part of the left thigh. Upon being called in soon after, I recognised it at once as a fracture of the femur; its seat is the junction of the upper with the middle third of the bone. It is stated by the friends that, at the instant of its occurrence, the thigh was flexed with great force, by the intensity of the spasm, on the pelvis, and the fracture was evidently effected by the powerful action of the flexor muscles of the thigh. Assisted by Dr. Richardson, I administered ether, extended the limb, and applied a thick pasteboard splint to the thigh, carrying the bandage around the pelvis, the only idea being to secure union with the least possible inconvenience to the patient, with little regard to shortening.

June 1st.—Union of the fracture is firm, with considerable bowing and shortening, as was anticipated. A pasteboard splint encircling the thigh, and coated with a solution of shellac to prevent injury from urine and other fluids, is still kept on to prevent a repetition of the fracture, as he still has the convulsions.

December 13th.—The *right* femur was fractured to-day in precisely the same manner as was the left. Put it up in the same manner.

January 29th.—Patient's health has been gradually failing since the occurrence of the last fracture, and to-day he died from gradual exhaustion. No attempt at union of the fracture has taken place. No autopsy could be procured.

ART. 143.—*Case in which there was an excellent knee-joint after the Removal of the Patella.* By Dr. O. B. KNODE.

(*North American Med.-Chir. Rev.*, May, 1860.)

A case like the following is related in Professor Gross's work on surgery; another is to be met with in the analogous work of Professor Eve; and these two are the only cases which Dr. Knode has been able to find.

CASE.—On the 10th of March, 1859, I was requested by Col. A— to visit, in consultation with Dr. Wheeler, of Palermo, his son residing in Doniphan County, Kansas Ter- twelve miles distant from this city. On arrival I found Dr. [illegible] and upon inquiry learned that about Christmas preceding twenty-one years, of nervous, sanguine temperament, had [illegible] frozen ground and slightly bruised his

left knee, to which he paid but little attention, until he was reminded of it by its becoming painful, hot, and swollen, when he sought the advice of a Kansas quack doctor, who, he declares, by irritating applications of various plasters, powders, and the like, produced sloughing of the integuments, and finally denudation and death of the patella. Thinking it was beginning to be a very serious affair he called Dr. Wheeler to visit him, who seeing the nature of the injury, informed Col. A— of the fact, when he came at once to request me to consult in the case.

I found the young gentleman very much emaciated, pale, with hectic flush, pulse 130 beats per minute, and had been confined to his bed for two months and a half. On examining the knee, I found the necrosed patella black, denuded of its investments and dead, imbedded in a profuse mass of unhealthy granulations sprouting up around it, an inch or more high; the suppurative process having opened the synovial membrane to a large extent, the synovia was found to be distilling from the cavity of the joint in considerable quantity. The ligamentum patellæ was found intact on its under surface, but in a somewhat softened condition, and the tissues generally about the joint swollen and enlarged.

Upon consultation, it was thought, after taking all the circumstances of the case into consideration, that its early removal was pressingly indicated—his quick and compressible pulse, his emaciation, his hectic, and his fast-failing strength, all indicated that he could not much longer sustain the irritating consequences the dead patella was inflicting; consequently, two days after, the patient being put fully under the influence of a mixture of chloroform and ether, Dr. Wheeler removed the bone by seizing it with a pair of strong dissecting forceps and detaching with a scalpel the attachments left by the ulcerative process, which consisted in a part of both the ligamentum patellæ and portions of the yet attached synovial membrane. Of course, its removal exposed fully the inside of the joint; and the cartilaginous ends of both the femur and tibia looked perfectly healthy. The patella was necrosed down to its internal articular cartilage, which was healthy, except a couple of discoloured spots, which showed conclusively that its complete destruction was being rapidly accomplished. The wound was closed as near as possible by adhesive straps, but the edges could not be entirely approximated; a piece of lint dipped in glycerin was applied over the wound, and the whole knee enveloped in a couple of turns of surgeons' gum-elastic cloth, extending five or six inches above and the same distance below the wound, and fastened by a small roller at each end, to exclude as perfectly as possible the air from the joint—a device which, I think, contributed much to the satisfactory result obtained. The limb was then placed upon pillows, in a slightly flexed condition. In consequence of great suffering from pain in the joint, a full dose of morphia was given, to be repeated at such intervals as would be necessary to keep him entirely comfortable; a generous diet was ordered, with wine and other stimulants. I then left the patient, Dr. Wheeler attending to the after-treatment, and expected, as a matter of course, that if he recovered at all it would be with an anchylosed joint; but judge of my surprise and astonishment at meeting him on the street, in this city, a few days since, five months after its removal, walking almost as well as if nothing had occurred. I then examined the joint, and found the depression made by the loss of the knee-cap, and in its stead a ligamentous band seemingly uniting the two ends of the ligamentum patellæ. He then showed me how well he could walk, run, jump, kick, and in fact execute every movement of the joint almost as well as with the sound one; and he further assured me, that the strength of the joint, as well as the facility of its movements, were daily increasing.

ART. 144.—*On Rupture of the Popliteal Artery and Aneurismal Sac.* By Mr. POLAND, Surgeon to Guy's Hospital, &c.

(*Guy's Hospital Reports*, 3d series, vol. vi, 1860.)

This paper is based upon seventy cases, a few of them occurring in Guy's Hospital, the majority collected from various sources. All lesions are excluded accompanied with breach of surface, such as punctured, incised, lacerated, and gunshot wounds.

The author concludes with a general summary of the treatment and results of ruptured popliteal artery and aneurismal sac, and with this we must content ourselves, merely adding that the paper contains everything else which the practical surgeon can want to know in connexion with the subject of which it treats.

"The most important point for inquiry is, as to whether in these cases we should attempt to save the limb; now, in 16 cases out of 70, viz., 22·82 per cent., recovery with a sound limb took place; hence there are fair grounds and reasons for this line of treatment when thought justifiable, but much discretion must be employed; the amount and rapidity of the extravasation must be taken into consideration, and its influence on the circulation in the limb below, as shown by loss of temperature, loss of sensation, the presence of œdema, and the absence of all pulsation; the age, habits, and constitution of the patient must also necessarily engross our attention.

"In 32 cases where amputation was not performed, 16 recovered; 16 died. In 38 cases in which amputation was performed, 21 recovered; 15 died; and in 2 the result not stated. Thus, of 68 cases there were 37 total recoveries, 54·41 per cent.; and 31 total deaths, 45·58 per cent.

"The following subdivisions fully expose the treatment and results:

"*Cases in which no operation was performed:* 6 cases; 2 recoveries, and 4 deaths.

"Case 6. Complete rupture; gangrene; spontaneous amputation below knee. Recovery.

„ 9. Complete rupture; sudden hæmorrhage on sixteenth day. Death.

„ 21A. Partial rupture; secondary hæmorrhage. Death.

„ 24. Partial rupture; secondary hæmorrhage and gangrene. Death.

„ 28. Ruptured aneurismal sac; bursting of tumour externally; hæmorrhage. Recovery.

„ 29. Ruptured aneurismal sac; exploration; suppuration; sudden profuse hæmorrhage. Death.

"*Cases in which compression was employed:*

"Case 30. Compression intermittent for 134 hours, during twenty days. Recovery.

„ 31. Compression carefully employed for nineteen days. Recovery.

„ 32. Compression for two months; erysipelas; extravasation, &c. Death.

„ 33. Compression bein[illegible]uccess; when artery gave way above sac, &c

"*Cases in which popliteal space* was laid open by incision, and ligature placed above and below rupture.

"Case 2. Complete rupture; immediate operation; gangrene; amputation. Death.
„ 16. Partial rupture; operation performed on eighth day; gangrene thirty-six hours after. Death in six days.
„ 17. Partial rupture; operation performed in sixth week; ligatures came away on nineteenth day. Recovery.
„ 18. Partial rupture; operation performed at several days; suppuration. Recovery.
„ 19. Partial rupture; operation attempted nine months after, and failed; amputation. Recovery.
„ 20. Partial rupture; operation performed; hæmorrhage; ligature had slipped off; amputation. Death.

"*Cases in which ligature of the femoral artery was employed:* 27 cases.

"Case 1. Complete rupture; ligature in a few hours; rapid gangrene. Death.
„ 7. Complete rupture; ligature in a few hours; gangrene; amputation. Death.
„ 10. Partial rupture; ligature at five weeks; gangrene. Death.
„ 11. Partial rupture; ligature at three weeks; gangrene. Death.
„ 12. Partial rupture; ligature at six weeks; gangrene. Death.
„ 23. Partial rupture; ligature at thirty hours; gangene. Death.
„ 25. Partial rupture; ligature at eight days; gangrene. Death.
„ 13. Partial rupture; ligature at three weeks; fever, diarrhœa, &c. Recovery.
„ 14. Partial rupture; ligature at eight weeks; gangrene of foot. Recovery.
„ 15. Partial rupture; ligature at three weeks. Recovery.
„ 22. Partial rupture; ligature at five days. Recovery.
„ 34. Ruptured sac; ligature at eight days. Recovery.
„ 35. Ruptured sac; ligature. Recovery.
„ 36. Ruptured sac; ligature at one day; gangrene, rapid. Death.
„ 37. Ruptured sac; ligature at two or three months. Recovery.
„ 38. Ruptured sac; ligature; gangrene. Death.
„ 39. Ruptured sac; ligature at several days. Recovery.
„ 40. Ruptured sac; ligature at one day. Recovery.
„ 68. Ruptured sac; ligature; gangrene. Death.
„ 69. Ruptured sac; ligature at one day. Recovery.
„ 41. Ruptured sac; ligature; gangrene; amputation. Recovery.
„ 42. Ruptured sac; ligature at one day; gangrene; amputation. Recovery.
„ 43. Ruptured sac; ligature; hæmorrhage; amputation. Recovery.
„ 44. Ruptured sac; ligature at eight weeks; inflammation and suppuration; amputation. Death.
„ 45. Ruptured sac; ligature at seven days; hæmorrhage; amputation. Recovery.
„ 46. Ruptured sac; ligature at seven days; gangrene; amputation. Recovery.
„ 47. Ruptured sac; ligature at four days; gangrene; amputation. Recovery.

"Of these, sixteen recovered; but in six, amputation was had recourse to; eleven died—nine, after gangrene; and two, after amputation.

"*Cases of amputation:* 38, in 70 total cases; being 54·28 per cent.

"I. *Primary amputation:* 12 cases; 7 recoveries, and 5 deaths. Recoveries being 57·89 per cent.

"Case 3. Complete rupture; immediate amputation. Death.
" 4. Complete rupture; immediate amputation. Death.
" 20. Partial rupture; ligature of ruptured vessel without checking hæmorrhage; immediate amputation. Death.
" 19. Partial rupture; attempts to ligature ruptured vessel; failure; immediate amputation. Recovery.
" 49. Ruptured sac; compression employed, and could not be borne; amputation. Recovery.
" 55. Ruptured sac; no previous treatment; amputation. Recovery.
" 56. Ruptured sac; no previous treatment; amputation. Recovery.
" 57. Ruptured sac; exploration with lancet; amputation. Death.
" 59. Ruptured sac; exploration with lancet; amputation. Recovery.
" 60. Ruptured sac; exploration with lancet; hæmorrhage on following day; amputation. Death.
" 62. Ruptured sac; exploration with lancet; sudden increase on following day; amputation. Recovery.
" 63. Ruptured sac; exploration with lancet; alarming hæmorrhage on third day; amputation. Recovery.

"II. *Secondary amputation:* 26 cases; 14 recoveries, 10 deaths, 2 not stated. Recoveries, 53·84 per cent.

"Case 2. Complete rupture; ligature of femoral; spreading gangrene; amputation on fifth day. Death.
" 5. Complete rupture; gangrene; attempts at separation; amputation at seven weeks. Recovery.
" 7. Complete rupture; ligature of femoral; gangrene; amputation at seven weeks. Death.
" 8. Complete rupture; gangrene; amputation on fifteenth day. Recovery.
" 26. Partial rupture; secondary hæmorrhage; infiltration; amputation. Recovery.
" 27. Partial rupture; secondary hæmorrhage; amputation at about ten weeks. Recovery.
" 21B. Partial rupture; slow progress; amputation at three months. Not stated.
" 48. Ruptured sac; compression employed; threatening gangrene; amputation. Recovery.
" 52. Ruptured sac; compression; ligature of femoral; threatening gangrene; amputation. Recovery.
" 53. Ruptured sac; compression; threatening gangrene; amputation. Death.
" 54. Ruptured sac; compression; threatening gangrene; amputation. Death.
" 61. Ruptured sac; no previous treatment; threatening gangrene; amputation. Death.
" 51. Ruptured sac; compression; threatening gangrene; amputation. Not stated.
" 41. Ruptured sac; compression; ligature of femoral; spreading gangrene; amputation. Recovery.

Case 42. Ruptured sac; exploration; ligature of femoral; spreading gangrene; amputation. Death.
„ 46. Ruptured sac; ligature of femoral; spreading gangrene; amputation, Recovery.
„ 47. Ruptured sac; compression; ligature of femoral; spreading gangrene; amputation. Recovery.
„ 58. Ruptured sac; no previous treatment; spreading gangrene; amputation. Recovery.
„ 65. Ruptured sac; no previous treatment; spreading gangrene; amputation. Death.
„ 67. Ruptured sac; no previous treatment; spreading gangrene; amputation. Death.
„ 64. Ruptured sac; gangrene arrested and line of demarcation; amputation. Death.
„ 43. Ruptured sac; exploration; ligature of femoral; hæmorrhage; amputation. Recovery.
„ 45. Ruptured sac; exploration; ligature of femoral; hæmorrhage; amputation. Recovery.
„ 66. Ruptured sac; exploration by incision; suppuration; hæmorrhage on fifteenth day; amputation. Recovery.
„ 50. Ruptured sac; compression; inflammation; suppuration; knee implicated; amputation. Recovery.
„ 44. Ruptured sac; ligature of femoral; inflammation; suppuration; knee implicated. Death."

Art. 145.—*A new mode of making pressure in Popliteal Aneurism.* By Dr. Moffatt.

(*American Med. Times*, July 14, 1860.)

The apparatus described by Dr. Moffatt is a modification of the one already employed by Dr. Fountain:

"On the 22d of March, there came to the Seaman's Retreat, a coloured man—a sailor by profession, a native of Pennsylvania, æt. 51 years. He had arrived from Calcutta in the previous month, and came to the hospital for the cure for rheumatism, with which he had been considerably afflicted for about eight months. He complained chiefly of the right knee-joint, which, he said, was very much swollen, especially behind, and for which he had been using a variety of remedies, both internally and locally. He had followed the sea for a great many years, and had been addicted to most of the vices which are common among men of his class. His complexion was that of a dark mulatto. He was about five feet ten inches in height, thick set, broad shouldered, and weighed about 180 pounds. The affection of the knee-joint was of about six months' standing—beginning first as a small tumour between the hamstrings, and gradually increasing without occasioning much inconvenience except stiffness. He attributed the difficulty to a wrench in lifting, at which time he experienced a sensation as of something giving way. He was found, on careful examination, to have a pulsating tumour in the right popliteal space, of the size of a large orange. On consulting with Dr. Isaacs, of Brooklyn, it was decided not to ligate the femoral on account of suspected atheromatous disease, but to try first the effect of oompres-

sion as devised and successfully practised by Dr. Fountain. In a few minutes, with the aid of a carpenter we erected a structure consisting of a stick of timber about four inches in thickness by eight in width—one end of which was secured to the top of an upright post of the same dimension. This post was fastened firmly to the floor, and lashed to the iron cross-bar at the head of the bed. It was about six feet in height, and bevelled at the top to receive the stick first named; these were firmly nailed together. The large piece of timber about twelve feet in length rested at the lower end upon a strong table, placed at the foot of the bed, thus forming an inclined plane over the bedstead placed lengthwise underneath it. The patient was then placed upon the bed in the supine position, with his leg slightly flexed —somewhat everted—wrapped in thick layers of cotton, and placed in a long fracture-box: a compress made of adhesive plaster wound tightly into a roll, about an inch in length, and three eighths of an inch in diameter, was then placed upon the femoral at the inferior angle of Scarpa's space. Upon this rested the lower end of a perpendicular piece of wood about an inch square, the upper end of which was bevelled to meet the inclined plane before described.

"The pressure was commenced at eight in the morning. The degree of pressure was regulated by drawing the upper end of the perpendicular down the inclined plane, to a greater or less extent as might be required. The hand of the operator was kept upon the stick, and thus secured an equable pressure, even though the patient moved his limb, as he sometimes did a very little. A second compress and upright were placed over the artery as it crosses the horizontal ramus of the pubes, and when the pain from pressure in one was too great to be borne comfortably the other was used, and thus alternately compression was kept up until five in the evening, when pulsation could be no longer felt in the tumour.

"The patient complained but little for the first two hours. Three doses of opium were given, which gave him so much ease that he slept somewhat before the operation was completed. Moderate compression was kept up for eight hours longer, after which the patient was kept for several days quietly upon his bed. The tumour, at first very hard and slightly tender, gradually diminished in size; his leg and foot, in which he had experienced benumbing and prickling sensations, gradually regained their natural feeling, and on the 20th April following he left the institution perfectly free from any trouble of the joint—with only a small walnut-sized tumour in the popliteal space. We have had no tidings of him since.

"The great simplicity of this plan of compression, which is always available, must be palpable to every one. That it is far easier for the patient, and unspeakably more so for the operator, cannot be questioned. It would also seem reasonable to infer that the compression itself, made at but one point, is more uniform and certain than has yet been secured by any other method."

PART III.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 146.—*On Substituted Presentations.*
By Dr. R. UVEDALE WEST, Alford, Lincolnshire.

(*Gaz. Hebd.*, Feb, 24, 1860.)

IN this paper Dr. West suggests that a certain theory, proposed by Dr. Spiegelberg (in an article extracted by the 'Gazette Hebdomadaire' from the 'Monatschrift für Geburtskunde') in explanation of an occasional retardation of labour in the last stage, may conduct us to the discovery of an important law regulating *the substitution of one portion of the presenting mass of the fœtus for another*, which occasionally takes place in complicated presentations. Three cases are detailed in illustration. In the first of these a shoulder and an ear presented, the shoulder lying next the pubes, and the head in the hollow of the sacrum; in this case the shoulder slipped up above the pubes, the ear followed it, and a normal presentation of the vertex was substituted for the complicated presentation originally offering itself. In the second case the pelvis was occupied by the head of the child and an arm lying across in the hollow of the sacrum, the head thus occupying a situation the reverse of that occupied by the same part in the preceding case, and with a less fortunate result, for the head, lying next the pubes, slipped up above it, and the arm entirely took its place, necessitating the operation of turning to effect the delivery. The third case resembled the second in its essential characteristics, and turning was likewise performed. Dr. West thinks that we may regard it as a *law*, that in complicated presentations the part which lies nearest the sacrum is liable to substitute itself for that which lies behind the pubes; "in fact," says Dr. West, "it appears to me, that the expulsive efforts of the uterus, when pushing the fœtus through a curved tube, such as the pelvis is, must occasionally

produce an effect similar to that described by Dr. Spiegelberg, when efforts made in the axis of the brim are required to push the presenting part along the axis of the outlet, an axis nearly at right angles with the former. In the complicated presentations described, the parts near the sacrum being more directly in the axis of the brim, while the part near the pubes have passed forward beyond that axis."

A fourth case, however, is given, in which, the face having turned itself to the pubes, descended from its position there and substituted itself for the originally presenting cranium—a substitution of face for vertex-presentation, and that notwithstanding the face had been next the pubes, and the cranium in the hollow of the sacrum. But this case, Dr. West thinks, ought to be regarded as exceptional, on the principle that *exceptio probat regulam.*

ART. 147.—*On Special Position and the Obstetric Binder as aids in the treatment of impeded parturition.* By Mr. ROBERT HARDEY.

(*Medical Times and Gazette*, March 17, 1860.)

In this paper (which was read before the Obstetrical Society of London) Mr. Hardey advocates the sedentary position, or chair, to which his attention had been first directed in 1827, under the direction of the late Mr. Craven, of Hull. From that period to the present, the author has adopted this mode of management in all cases where the difficulties to be overcome demanded more than ordinary efforts for the accomplishment of the delivery. In our treatment of labour generally, we are apt to ignore the important fact that the activities of parturition are dependent altogether on muscular power—*ergo*, all agents which sustain and increase motor force are real benefits to the parturient female, and *vice versâ*. Of these excitors of motor power two of the most valuable are the sedentary posture and obstetric binder. Mr. Hardey next points out the advantages and disadvantages resulting from a variety of parturient positions—viz., standing, reclining on the back, prone and horizontal postures, and concludes this part of his subject by a strong recommendation of the sedentary posture on or between two chairs. His plan is to secure the fronts of two chairs to each other, and separate their backs from one and a half to two feet; to place the patient well over or between these, with her knees firmly pressed against the side of the bed, her chest fixed by holding on the footpost of the bed, and her feet placed firmly on the floor. The accoucheur sits or kneels behind his patient, who remains on the chairs till the difficulties in the case have been overcome, which is evidenced by the emerging of the fœtal head from behind the perinæum. The woman is to be then removed to bed, and finally delivered in the ordinary position. Before seating the patient, her abdomen is to be carefully sustained by a broad binder, to which Mr. Hardey attaches far greater importance than is conceded to it generally. The views advanced are illustrated by diagrams and drawings. In every case, before adopting the sedentary posture, the part presenting should be somewhat within the pelvis, and the os uteri half

dilated. The practice is contra-indicated by—1st, impending systemic exhaustion; 2dly, inflammation in any vital organ or part more immediately associated with parturition, serious uterine hæmorrhage, previous puerperal convulsions, version presentations, a pulsating funis, and extreme pelvic obliquity. The plan in question, the author maintains, secures to the parturient female in impeded labours—*a*, the very important aid derived from gravitation in the uterine ovum; *b*, the putting forth under the most favorable circumstances the highest amount of motor energy of which nature is capable; *c*, the bringing the abdominal and pelvic axes into the same obstetric plane; and *d*, the imparting great support to the fundis uteri in its contractions by the obstetric binder. He strongly recommends the use of the binder before delivery in a variety of cases, independent of its connection with the chairs, as an agent which usually accelerates the birth of the infant in a remarkable manner. The parturient conditions demanding the use of the chairs and binder are those arising from both mother and infant, in which unusual delay or difficulty present themselves. The period required for the delivery varies with the obstacles to be overcome, from one to two hours being ordinarily sufficient, with an interval of repose on the bed. In conclusion, Mr. Hardey commends the practice to his professional brethren for the following considerations: 1st, its great simplicity; 2dly, its entire freedom from danger *per se;* 3dly, its very great potency; 4thly, its testing the ability of nature to accomplish the delivery at a period sufficiently early to enable the accoucheur to decide on the use of instruments before material damage has been sustained by the maternal tissues; 5thly, the conscious satisfaction experienced by the woman at feeling her labour is progressing towards completion; and, lastly, its being a great economist of professional time, which to medical men is property of the most valuable description.

Mr. Hardey recommends the sedentary posture only in certain cases attended with difficulty, and he allows the ordinary position on the left side to be admirably suited for the greater number of natural labours.

ART. 148.—*When the forceps fails, is Craniotomy our only resource?* By Dr. ROBERT BARNES, Assistant-Physician to the London Hospital, &c.

(*Lancet*, March 24, 1860.)

The affirmative answer involves two objections of serious moment. First, it condemns a multitude of children yet unborn to certain destruction. Secondly, it arrests, *in limine*, all improvement, all progress in the obstetric art, as bearing upon labour obstructed through contraction of the pelvis.

Humanity and science, then, conspire in urging us to hesitate long, and to examine patiently, before yielding our assent to a decision so revolting.

"If there is one way," says Dr. Barnes, "in which I am conscious that observation and reflection have wrought a more wholesome, a

more chastening, influence upon my mind than another, it is in convincing me of the error of deciding upon great medical questions by *à priori* reasoning, instead of appealing to experience. It must be obvious that such a course interposes a formidable barrier against the advancement of knowledge. He who is strong in the self-sufficiency of actual knowledge will be apt to discourage the spirit of new inquiry in others. We are not yet arrived at that stage in the history of medicine where we can rest content in the sterile contemplation of present acquirements, and can afford to abandon the fertile paths of experiment and inquiry.

"I believe that in no case more than in the one before us do we run more danger of falling into error, by substituting bare reasoning for that method by which reason and experience combined are constantly made to guide and check each other. What is wanted is an experience *ad rem*. To seek illustrations from practice conducted upon diametrically opposite principles, is to seek for light where it has been purposely extinguished. Yet it is from this darkened source that all the arguments against delivery by turning in contracted pelvis are drawn. It is scarcely, then, a matter for surprise that these arguments assume an aspect so logical and consistent, enforced as they are by men of such deserved authority, that they almost command assent.

"The case against turning and in favour of craniotomy in contracted pelvis may be stated briefly in this way. It is estimated that rather more than one third of the children are lost under turning where the pelvis is of the ordinary size. It is urged that a living child may pass through a pelvis, the conjugate diameter of which is 3·25″, with or without the forceps. Now, it must be conceded that the main object of delivering by turning is to save the child's life. But in the case of a pelvis having a conjugate diameter of 3·25″, the operation is unnecessary. Its application must therefore be limited to cases in which the pelvis measures less than 3·25″. And, it is asked, what is the chance of the birth of a living child when the violence of compression is added to the ordinary risk of turning? Are we justified, for the sake of the very slender hope of saving the child under such circumstances, in subjecting the mother to the dangers of contusion, of laceration, of inflammation, which it is but natural to anticipate will follow upon dragging the child by sheer force through a narrow pelvis?

"Such is the argument, endorsed by great names, that has to be encountered. It required no ordinary sagacity, and no common courage, to detect the fallacy of the argument, and to rebel against the authority that supported it. It required moral courage to dispute what seemed a well-settled rule of practice; it called for the courage of clinical enterprise to carry out a plan of treatment, the success of which was doubtful, the result of which might be disastrous. Under all this discouragement Professor Simpson revived the operation. If it be destined to resume a place in obstetric art, this result will be mainly due to his sagacity and enterprise. But in according due praise to Dr. Simpson, the merit of the practitioners of former times must not be forgotten. The operation is not new, but revived. Dr. Simpson, presenting his papers on this subject in 1850 in

a collected form, prefaced them with the following remark: 'Four additional sections or chapters were intended to be added—namely, one on the mechanism of the proposed mode of delivery as influencing the steps of the practice itself; a second, on the cases of obstructed labour chiefly adapted for delivery by turning; a third, on the best mode of conducting the operation in these special cases; and a fourth, or last, upon the history of the practice in ancient and in modern times.'

"I am not aware that Dr. Simpson has yet realised his intention of writing the last or historical section. But the deficiency has been ably supplied by Dr. Charles West and Dr. Ramsbotham. Since obstetric doctrines, like other things, sometimes revolve in cycles, it is interesting to examine the circumstances under which the operation we are now considering arose, and the phases it has undergone. For some time after the value of turning in order to deliver in cases of transverse presentation had been demonstrated by Ambroise Paré, the operation grew into favour, and was resorted to under a great variety of circumstances. It would appear to have been the general resource where artificial delivery was indicated on account of obstruction or urgent complications. The reason was simply that, the forceps being unknown, and the other instruments in use being so rude and inefficient, the hand was, and perhaps still is, really the obstetrician's best instrument. To it he therefore trusted. Many acquired great skill in turning. The operation was resorted to in cases of obstructed labour. It was only after the introduction and vulgarization of the forceps that turning fell into disuse. And when the craniotomy instruments were perfected, for the purposes of lessening the head and extracting it by crochet or forceps, craniotomy presented a solution of the difficulty so tempting by its facility that turning came to be nearly, if not altogether, discarded. The practice, however, was partially maintained in this country by Dr. Denman; in France by Baudelocque and Lachapelle; in Germany by Stein and Osiander the elder. But although it was still distinctly advocated in 1833 by Osiander the younger, it may be said that the application of turning as a method of delivery in contracted pelvis is emphatically condemned in the Schools, or holds at best a very doubtful place. Now we are 'trying back.' And it is time. I cannot help declaring that craniotomy is carried to a frightful excess. As holding out a hope, at least, of lessening that excess, it has become a matter of great moment to direct our most anxious and careful attention to the applications of turning.

"What are these applications? I believe that we are not yet in a position to give a definite answer to this question. I postpone all attempt to answer it. I propose to subject it to the test of clinical experience. With this view I shall publish from time to time cases observed by myself, which illustrate the uses of the operation, and the conditions under which it may be applied."

ART. 149.—*On Turning in all cases of Labour.* By Mr. FIGG.

(*Medical Times and Gazette*, Oct. 20, 1860.)

Adverting to the condition of the mother and infant after delivery by this method (*v.* "Abstract," XXIX, 169), Mr. Figg says—

"In the generality of cases there is no perceptible difference between them and others in circumstances of recent delivery. I have heard four or five complain of a slight pain in the left hypogastric region; but on closer inquiry have discovered it to be the exaggeration of an uneasiness existent in the locality for months *ante partum*. I generally desire my patients to rise on the fifth day. Occasionally they do not consult me, and pronounce themselves convalescent on the third. Of course they participate in the pathological peculiarities of the state. Version neither predisposes to or prevents the short ephemeral fever provincially termed 'weed,' and which may have affected twenty per cent. of my cases.

"In reference to the children, some cry instantly. The majority do not cry till about sixty seconds have elapsed. Some require bathing and persevering effort to resuscitate. In the delivery of children of this class, however, many practitioners would have used long forceps, and in all probability extracted lifeless infants. One in fifty of the children may have moaned for an hour; in two I have seen a slight convulsive movement of the feet. In ninety per cent. of presentations of the third, the foot by which the extraction was conducted was slightly discoloured at the malleolus; in three days it spontaneously disappeared. I have only lost one infant during the past year. To form a statistical estimate of the preponderance of advantage or evil in the measure, it is necessary that I give a numerical account of the cases—how many constituted the aggregate; how many might be distinctively designated impeded; how many natural. On the leading query I may state that I have a memorandum of 317 cases, extending over a period of twelve years. This, however, falls within the number, as I occasionally assisted students in difficult labours, not registering the instances in which it was then adopted. Respecting the second, we know—notwithstanding the admirable rules laid down by authors to guide us to a definite judgment as to what is and what is not an obstructed labour—that every man assumes an arbitrary prerogative in the formation of his own idea on the subject. We also know, from the annals of the profession, that wherever there is an inclination for any particular measure, there is also a propensity to interpret the features of a case to justify its adoption I am not prepared to exculpate myself from the charge of having acted under this influence. On the revival of the operation by Dr. Simpson, I rigidly collated and compared the various evidences of abnormal difficulty in the instances in which I had recourse to it. Encouraged by success, the following year relaxed the minuteness of my diagnosis, and included a wider circle. This in turn became too limited for the operation; and thus I progressed until forced to confess that I had crossed the line of demarcation between morbid and natural cases. This transgression of professional rule does not necessarily imply transgression of reason's law. I have

only to couch the argument in logical form to ensure a verdict in its favour. That remedy which is equal to the major difficulty is greater than the minor. If version be adequate to safety of mother and child where abnormal complications darken the prognosis, imparting difficulty to the execution, will not the prospective advantage to the patients be materially increased where the obstructions are only normal?"

ART. 150.—*On the harmlessness of Ergot of Rye in proper cases.* By Dr. A. J. CHRESTIEN.

(Pamphlet, Montpellier, pp. 52, 1860.)

The substance of this pamphlet is occupied by an account of ten cases of tedious labour, in which ergot was given with more or less advantage; and the rest is devoted to a panegyric on the drug. In actual practice, however, Dr. Chrestien does not appear to have given ergot oftener than in 2·2 per cent. of his cases, and hence it is evident that he is not likely to err seriously in over-estimating the number of the cases in which the administration of the drug is really proper. In this country, we think, few persons require to be told that there are some cases in which this old remedy is an important help to the obstetrician; at Montpellier it may be different, and there, possibly, Dr. Chrestien's pamphlet may be of service.

ART. 151.—*On Twin Births.* By Dr. E. VON SIEBOLD.

(*Monatsch. für Geburtsk.*, Bd. xiv, 1860.)

In this paper Dr. E. Von Siebold gives an account of the number of twin births which have occurred at the Göttingen Midwifery Institution since its establishment. These amount to 89 in number, occurring in 7139 births, which have taken place between the years 1792 and 1859—*i. e.* 1 twin birth in every 80 births. According to Veit's statistics, the proportions is in Prussia 1 in 89, in Wirtemberg 1 in 86, and in Saxony 1 in 78. In relation to different towns, great varieties in the proportion have been observed (as stated by Kürschner in his thesis), as 1 in 158 at Naples, 1 in 126 at Palermo, 1 in 118 at Lüneburg, 1 in 110 at Marburg, 1 in 96 at Hamburg, 1 in 88 at Berlin, 1 in 86 at Leipzic, 1 in 85 at London, 1 in 84 at Paris, 1 in 74 at Vienna and Würzburg, 1 in 68 at Dresden, 1 in 62 at Heidelberg, 1 in 72 at Prague, 1 in 75 at Philadelphia, 1 in 57 at Dublin. How rare is the occurrence of *triplets* may be judged of from the statistical account of Prussia, given by Hoffmann, from which it appears that, between the years 1826-34, there occurred in Prussia 4,467,031 single births, 52,384 twin births, 659 triplet cases, and 11 quartet cases. In the year 1840, too, there occurred 574,293 single births, 6381 twin births, 72 triplets, and 1 quartet.

The author divides his analysis into two parts, the first comprising 35 twin births, attended by Osiander between the years 1792 and 1822; and the second comprising 54 cases, attended by Mende and himself,

between the years 1823 and 1859. With respect to the first series of 35, the following positions of the children are indicated. In 19 cases the head presented in both children, in 6 the head and breech, in 4 the head and feet, and 2 the breech and feet. In one case the feet presented in both children, and in another case the breech presented in both. In one case one child presented the head, and the other the shoulder; and in one case the position was not accurately ascertained. In the 35 cases, *i. e.* 70 children, only 28 children were delivered by leaving the case to nature, the others being removed either by the forceps, turning, or extraction of the feet—meddlesome midwifery being strongly inculcated by Osiander in twin cases, as affording the practitioner an admirable opportunity of practising midwifery operations! The proportion of stillborn children is not stated.

Of the second series of 54 twin births, the following particulars are given. There were head presentations of both twins in 22 cases, head and breech in 11, head and feet in 10, head and shoulder in 5, breech in both in 2, breech and feet in 2, the feet in 1, and the breech and shoulder in 1. Adding together the two series of cases, the following results are obtained:

Presentation of the head in both children	41
Head and breech	17
Head and feet	14
Head and shoulder	6
Breech and feet	4
Both breech presentations	3
Both foot presentations	2
Breech and shoulder	1
	88

Of the 108 children born in the 54 twin births, 83 were so by the sole efforts of nature—interference by means of the forceps, by turning or by extraction, only taking place with respect to 26 children—a marked contrast to the practice pursued by Osiander. In 87 of the conjoined cases, 2 boys were born in 28, 2 girls in 17, and a boy and a girl in 42; there being 99 boys and 77 girls in 178 children.

ART. 152.—*On Retention of Urine in the Fœtus as a cause of obstructed labour.* By M. DÉPAUL.

(*Gaz. Hebdom. de Méd. et Chir.*, Nov. 20, 21, and 23, 1860.)

Judging from the silence of writers on midwifery upon this subject, M. Dépaul observes, this cause of difficult labour can be but little known. But although cases of retention of the urine in the fœtus carried to this extent may be rare, others are far more common, in which, owing to the secretion having continued during a less lengthened period, or having been less abundant, the tumour resulting from its accumulation has been much less considerable, or may have passed unperceived at the period of birth. At present the author confines his attention to the obstetrical [illegible] hese cases, proposing on a future occa-

sion to demonstrate the fact now generally denied, viz., that the functions of the kidneys become established at an early period of fœtal life, the urine passing, by reason of the contractions of the bladder, through the canal of the urethra into the liquor amnii, of which it is indeed one of the principal sources. The following is an abstract of the particulars of the case which occurred in M. Dépaul's own practice, and is related by him at great length:

A lady, twenty-eight years of age, in her third pregnancy, found at the fifth month that she had attained the size usual at the end of gestation, this exaggerated size having begun to manifest itself after three months and a half. The movements of the child, too, perceived first at about the fourth month and a half, were very feeble, and kept getting more and more so. Soon after the sixth month labour pains appeared, and in the course of twenty-six hours dilatation had become complete. Notwithstanding, however, that the pains had of late become very active, no progress seemed to be made, and no liquor amnii was discharged. The midwife, wishing to expedite matters, used various violent tractions, the consequences of which were that the cervical spine became broken, and one arm and the head were detached from the body. A practitioner who was called in detached the other arm and opened the thorax, but, notwithstanding the evacuation of the lungs and heart, the trunk could not be delivered. After eight hours' endeavour of this kind, the author's aid was sought, the pains having now become feeble, but the patient's condition being in no wise alarming. He was at once struck by the enormous size of her abdomen, the fundus of the uterus extending six fingers' breadth above the umbilicus, while the organ had assumed the size of an uterus at full time when distended with a large quantity of liquor amnii. On examination the abdomen of the infant was found to be enormously distended, and this was at first attributed to ascites, although such large effusions into the peritoneum during intra-uterine life are very unusual. An opening into the abdomen was forced by means of the finger, and about a quart of a sanguinolent serosity was discharged. Notwithstanding this, it still continued immensely distended, and a fluctuating tumour was still to be felt. Perforating this with the nail, a quantity of transparent, citron-coloured fluid gushed out, which was estimated at about five pints. After this discharge the delivery was easily completed, and the patient did as well as after a natural labour. On examining the fœtal abdomen, and restoring it by means of insufflation to the large size it had prior to the punctures, it was found to measure twenty-one centimètres in the transverse, nineteen in the vertical, and fourteen in the antero-posterior diameters, and this independently of the increase which had taken place from effusion of serosity into the peritoneum. The abdominal walls themselves had also undergone a considerable thickening from serous infiltration. The distended bladder, the muscular walls of which were much hypertrophied, occupied almost all the cavity of the abdomen, the organ being in its largest circumference thirty-five centimètres. Three canals opened at its surface, the two ureters and the large intestine. This last terminated on the anterior side (its normal calibre having become diminished after coming in contact with the bladder to that of

a small quill), its aperture being scarcely detectable. Externally there was no indication of the orifice of the anus. The immediate cause of the urinary tumour was the obliteration of a portion of the canal of the urethra.

M. Dépaul quotes in detail cases more or less resembling this one related by Portal, in his 'Pratique des Accouchements;' by Mr. Fearn, in vol. ii of the 'Lancet' for 1834-35; by M. Delbovier, in the 'Archives de Médecine Belge;' by M. Gaudon, in the 'Bulletins de la Société Anatomique' for 1846; and by M. Duparcque, in the 'Annales d'Obstetrique' for 1842; and from the whole he draws the following conclusions:—1. The urinary secretion is established at an early period of fœtal life. 2. When, from vicious conformation or other obstacle, the urine cannot at this period of life be expelled into the cavity of the amnios, it accumulates in the bladder, and this organ may then attain dimensions which renders spontaneous delivery impossible, even when the pelvis is perfectly well formed and the period of pregnancy is not complete. 3. So great have been the difficulties thus produced, that in several cases the head and limbs have become detached without the obstacle being overcome. 4. Whenever an examination of the parts has been made with exactitude, it has been plainly demonstrated that, together with this development of the size of the bladder, there has coexisted a hypertrophy of its walls, and especially of its muscular coat, showing that the organ does not play merely the part of a passive reservoir, but that it frequently endeavours, during pregnancy, to expel the fluid which it has received. 5. The cases on record would seem to show, that while it may be well nigh impossible to recognise the nature of such a case during pregnancy, a strong probability, if not certainty, may be arrived at respecting it during the progress of labour. 6. The rarity of simple ascites carried to this extreme degree will at once lead to the presumption of a distension of the bladder; and retention of urine may be declared to be present when malformation of the genital organs can be made out by exploration. 7. Under any circumstance, the practice to be pursued is the same. When tractions, carried as far as prudence will permit, have failed, evacuation of the fluid must be resorted to. 8. As the vices of conformation of the urinary organs in question do not necessarily compromise the viability of the infant, it is absolutely necessary to practise the operation of puncture with all due precaution. The insertion of the funis will serve as a safe guide to the most favorable spot. 9. In proceeding in this way, it may not be impossible, by means of another operation, performed after delivery, to re-establish the natural passage of the urine, and thus save the life of the child.

ART. 153.—*On Transfusion of Blood, its history and application in cases of severe hæmorrhage.* By CHARLES WALLER, M.D., Obstetric Physician to St. Thomas's Hospital.

(*Trans. of the Obstetr. Society of London*, vol. i, 1860.)

In a brief but very interesting paper, Dr. Waller, to whom medicine is so much indebted for his experimental researches in transfusion

of blood, sums up the history of the remedy. Previous to 1785, transfusion was occasionally used for the removal of disease, brute blood being injected. In 1785, Dr. Harwood, in after years Professor of Anatomy at Cambridge, published a thesis on the 'Transfusion of Blood,' in which, "abandoning the idea of curing disease, he performs his experiments with a view of ascertaining whether the operation might be employed with advantage in cases of dangerous hæmorrhage." He answered the question in the affirmative, forming his conclusion upon numerous experiments on dogs. In the present century, Dr. Blundell repeated Professor Harwood's experiments, on a somewhat extensive scale, and with the same object in view, to wit, the recovery of animals apparently dying from hæmorrhage. The results of Dr. Blundell's experiments were highly satisfactory. Dr. Harwood had thought that the blood of a carnivorous animal might be substituted for an herbivorous, and *vice versâ*; but Dr. Blundell considered that it was "an essential element of success that the blood employed should be taken from an animal of the same species as that into whose veins it is about to be injected." Certain experiments made by Dr. Leacock, about the same time, tended to confirm this view.

Dr. Blundell, Mr. Doubleday, and Dr. Waller, next instituted another set of experiments, substituting for the dog the horse. "Here, also," writes Dr. Waller, "the result was most decisive. In no instance where the operation had been properly performed was there failure; the revivification was immediate and permanent."

After describing the mode in which the experiments were performed, and the marvellous results—the animal operated on having been bled until the death-struggle supervened, then, in a few seconds after transfusion, rising to its feet, walking away, and readily partaking of nourishment—Dr. Waller proceeds with his paper, and concludes as follows:

"It was impossible to ascertain the precise quantity of blood transfused; it was, however, small in comparison with that which had been removed; this fact was proved by the very slight effect produced upon the supplying animal; this was a point of great importance—as, had the result been otherwise, the operation as regards the human subject would, in all probability, never have been performed, in consequence of the difficulty, if not impossibility, of procuring the necessary supply. In these experiments arterial blood was used, in consequence of the greater facility with which it could be procured. In a few instances, Dr. Blundell made use of venous blood in his previous operations on the dog, with similarly beneficial results. The author is inclined to believe that, even if there were no impediment in the way of obtaining human arterial blood, venous would be preferable, as being the more natural stimulus to the right side of the heart. But will blood thus injected really nourish the system; or does it, as some have supposed, merely act as a temporary excitement? To settle this question, Dr. Blundell kept a dog alive for three weeks without food, a few ounces of blood being injected daily into the jugular vein.

"Hence it was satisfactorily proved that, in the inferior animals,

transfusion of blood might be used, not only without danger, but with perfect success; and it was reasonable to suppose that human blood, injected into human veins, would also be made subservient to the purposes of the human circulation.

"Dr. Blundell relates six cases in which the operation was performed on the human subject; and, although unsuccessfully as regards the preservation of life, the attempts demonstrated the fact that transfusion was neither difficult or dangerous.

"Of all cases of hæmorrhage, none seemed more favorable for a trial of this operation, than those which occur during the puerperal state, and which from their severity are termed 'floodings.' The outburst is sudden and profuse, the symptoms alarming, and often dangerous in the extreme. It is true, that in a large majority of instances, the bleeding may be arrested before the development of the more formidable symptoms, if proper means be promptly and vigorously had recourse to; it is equally true that there are cases of an opposite character, where there is no decisive rally, although the uterus is so firmly contracted as to prevent any further loss. The patient becomes more and more faint, each attack of syncope more alarming than its predecessor; the extremities *first*, the general surface of the body *afterwards*, become cold; the respiration deep, laboured, and hurried; the pulse at the wrist scarcely, if at all, perceptible, the heart itself feebly fluttering; add to these, restlessness and convulsive jactitation, and the catalogue of symptoms will convince the most inexperienced observer that death is imminent. The difficulty may be increased by vomiting, the stomach rejecting all nourishment and stimuli, and hence this, the usual source of supply, is effectually cut off.

"Let it be remembered that there is no organic disease to contend with, the danger arises solely from loss of blood; if, therefore, the quantity of the circulating fluid could be safely increased by the injection of pure blood into the vessels, it was reasonable to infer that recovery would take place; at all events, the facts previously related were sufficiently encouraging to justify the attempt in cases deemed hopeless under ordinary methods of treatment. The expectation has been fully realised, not only in cases of puerperal floodings, but in severe hæmorrhage, the result of accident.

"As the successful examples of transfusion bear so marked a resemblance to each other, the time of the Society will not be occupied by the detail of many cases; one only will be related:

"A lady of delicate habit, thirty years of age, was confined with her tenth child; she had been the subject of hæmorrhage after every labour. It was at this time renewed with increased severity, and attended with symptoms indicating the most urgent danger. Her medical attendant (an accoucheur of long standing and of great repute) requested the assistance of the author. The patient was found in the following condition: She was lying on her back, with the most perfect death-like countenance, the extremities were of a marble coldness, the general surface of the body also cold; respiration excessively laborious; the eyelids closed, the eyes insensible to light; the jaw dropped; no pulsation could be felt in the radial or carotid arteries;

the breathing was the only indication of life. Stimuli had been exhibited, but with no lasting benefit. Transfusion afforded the only chance of saving this patient's life; it was consequently performed without delay. The first injection of two ounces of blood produced no other effect than that of rendering the beat of the artery discernible; the second was followed by decided improvement. After eight ounces of blood had been introduced, this lady was sufficiently revived to recognise her medical attendant. She evidently felt uneasiness over the region of the heart, and placed his hand upon the left side of her chest; no irregular action was discovered on a careful examination. Two or three teaspoonfuls of brandy were given during the operation, and nothing else. The patient suffered from headache, and had occasional hysteric paroxysms, to which she had been long subject. There was no other unfavorable symptom."

The mode of performing the operation is now so well known, that it will be unnecessary minutely to describe it. Three things are necessary to be observed:

"First, that great care be taken to get rid of any air that may be contained in the syringe; secondly, to introduce the blood very slowly, experiments having proved that a sudden and large supply overwhelms the action of the heart, and causes immediate death; thirdly, to wait a few minutes between each injection.

"The syringe used by the author is lined with tin, and is capable of containing two ounces of fluid; it is furnished with a long tubule for the convenient insertion into the vein; a funnel communicates with the barrel of the syringe, through which the blood passes without being received into an intermediate vessel.

"It is seldom, if ever, necessary to inject a large quantity of blood: it is better to discontinue the operation as soon as the rally is decisive, and there is no returning collapse. In one case attended by the author, four ounces only were sufficient to produce this effect. Many persons doubted whether this small quantity could be of real service in a case of collapse otherwise fatal. In forming an opinion it should be remembered, that the intention of the operation is not to restore the vascular system to the condition which existed before the irruption of the blood; it is well known that the heart and vessels can accommodate themselves to a greatly diminished supply. There is a point, however, at which the circulation ceases. Might not the fatal event be prevented by the injection even of a very small quantity of healthy and pure blood, the heart being thus enabled to continue its contractions until the system was recruited by the usual process of digestion and sanguification? An example will illustrate the author's meaning. A patient is bled from the arm; after a certain quantity of blood has been lost, he *feels faint;* if the compress be now applied, and the bleeding stopped, he recovers; but if three or four ounces of blood be allowed to flow before the arm be tied up, after the symptoms of faintness have shown themselves, he swoons. Now, if four ounces of blood *lost*, make all the difference between an approach to, and actual deliquium, may not the same quantity *gained* make the difference between remediable and irremediable syncope?

"As a general rule, from eight to twelve ounces may be safely transfused."

Art. 154.—*On Transfusion in Puerperal Hæmorrhage.* By Dr. Edouard Martin.

(*Brit. Amer. Journal*, May, 1860.)

An examination of fifty-eight published cases, in which transfusion has been practised in obstetrical cases, has convinced Dr. Martin that the dangers of the operation have been greatly exaggerated. With respect to the indications for the operation, he says—

"*Whenever, with the presence of symptoms of great exsanguination*—general pallor of the skin, cold extremities, small, almost imperceptible pulse, attacks of fainting—*restoration through the alimentary canal is rendered impossible*, by vomiting up of the remedial and nutritive substances, by inability of swallowing, by severe gastric catarrh, &c., *the time has come for transfusion, and I advise not at all to delay this almost dangerless operation.*" *The continuance of flooding*—provided nothing else is neglected to stop it—*is no contra-indication, but rather the reverse.*

For the performance of transfusion, Dr. Martin recommends—besides a lancet or bistoury for the incision in the skin, and a glass syringe, seven inches long, amply holding two ounces—a slightly curved trocar, four and a half inches long (three of which is handle), the end of the silver canula, receiving the point of the syringe, being funnel-shaped, and covered with a thin plate of caoutchouc. Having determined on the operation, choose a strong, healthy, and willing man, or in the absence of such, a healthy, resolute, not frightened or depressed female, from whom to abstract the blood, and one or more intelligent assistants. Having procured a basin with clear, warm water, of 100° to 104° Fah., and a smooth porcelain cup, to catch the blood, fill the glass syringe, as well as the cup, with warm water, or immerse the latter in it in the basin. Then, during the same time that you lay bare the median, or if that should appear too small, the cephalic or basilic vein, by means of a cutaneous incision, one to one and a half inches long, and introduce the trocar half an inch, in the direction towards the heart into the vein (which may to this end be raised a little by means of a couple of threads drawn underneath)—let an assistant perform venesection on the arm of the individual whose blood is to be transfused. Now, while the blood is running into the emptied cup which may still be allowed to float in the basin, empty also the syringe of the warm water, and at once take up the fresh blood from the cup, being careful to see that the blood in the glass is liquid, and not frothy. Without hesitancy, place the point of the filled syringe in the funnel-shaped caoutchouc-covered opening of the trocar canula, which is fixedly held in the vein by a reliable assistant, after removing the stilet, and slowly push the piston inwards. After removal of the syringe, be sure to cleanse it immediately with warm water, unless you think it advisable to refill it at once with the still-flowing blood, and to repeat the injection immediately. Examination of the pulse and heart, and observation of the features, assures us of our success. Should this not yet be complete, the whole procedure is to be repeated, after taking care to have no coagula in the syringe or in the canula. Since it is

not always easy to find the median vein, it being collapsed in the exsanguious, it may sometimes become necessary to look for it on both arms; and it has occurred, and without injurious consequences, that transfusion was performed first on one arm and then on the other.

Having transfused the necessary quantity of blood, the canula is removed from the vein, and the wound dressed, just as after common venesection. It is, of course, understood that the greatest attention must, for some days, be bestowed upon this little wound; that the first symptoms of inflammation must be met with cold applications of lead-water, or snow, ice, &c., &c., and that, altogether, the patient must be carefully watched in every particular.

ART. 155.—*How soon should we despair of resuscitating a Stillborn child?* By Dr. T. GAILLARD THOMAS, Physician to the Bellevue Hospital.

(*New York Journal of Medicine*, May, 1860.)

"Until recently," says Dr. Thomas, in an able lecture on 'Suspended Fœtal Animation,' "I have been in the habit of stating that I had never seen a child resuscitated after the heart's action had entirely and certainly ceased. The following case, however (for the opportunity of observing which I am indebted to the kindness of Dr. John W. Francis, of this city), invalidates the statement:

"Mrs. R—, an impressible and nervous primipara, in the ninth month of pregnancy, was taken with uræmic convulsions of the gravest character on Tuesday at four p.m., without any signs of coming labour. Between this hour and nine next morning, she had eight eclampsic seizures of great severity; in the intervals she remained comatose, and after the attacks the tongue was left in a condition which was aptly described by an attending friend as 'shockingly mangled.' The pulse throughout the later periods ranged from 140 to 150 to the minute, and for many hours death was momentarily expected.

"By nine a.m. on Wednesday, artificial dilatation of the os was fully established, and introducing the forceps within the uterus, I delivered without difficulty.

"The child was to all appearance perfectly dead, Dr. Francis and I both remarking that it had the appearance of a child which had been dead for some time. To the most carefully practised auscultation not a sound of the heart could be heard, even after cold aspersion, slapping, blowing, and the usual stimulants of fœtal functions had been practised. Leaving the mother in the hands of Dr. Francis, I at once began to exert myself to discover whether a latent spark of life might not be developed in her offspring. For fifteen minutes the 'ready method' was practised without one sign of returning animation; so unsuccessful were my efforts indeed, that the friends of the lady seemed to regard the idea of a continuance as entirely useless. Removing the body to an adjoining room, I continued my efforts (*pro forma* rather than from any well-grounded hope of success), until about eight or ten minutes had elapsed, when the child

gasped feebly, as you have seen a young chicken do when about expiring. My flagging efforts now revived, and in about three quarters of an hour from the time of the birth I had the satisfaction of astonishing those around the mother's couch by returning to them with a living child. I confess that no one there was more surprised than I at the result of efforts, which I should never have been able to have persevered in had I been without some one able to take charge of the mother after her delivery. The child is now living, and, with its mother, is in excellent condition. It may be well for me to remark, that after the commencement of my efforts at resuscitation I did not again examine the heart, and I am therefore unable to say how soon it resumed its functions. In saying that twenty-five minutes elapsed between the delivery and the appearance of the first 'sign of returning animation,' I allude to signs visible.

"My object in relating to you this case is to impress upon you the importance of *always* attempting resuscitation, and of always *persevering* in your attempts for a length of time in every stillbirth, unless the putrid state of the child places success beyond the possibility of attainment. An examination of the evidence upon this point makes me feel assured that many a child has been put aside as dead, in which the smouldering embers of life might have been fanned into a flame by a reasonable amount of exertion on the part of the obstetrician. The sources of failure are undoubtedly often the employment of improper means of resuscitation, or want of perseverance in the employment of those which are proper.

"I cannot, I think, better engrave these precepts upon your memories than by bringing to your knowledge a few well-authenticated cases, which, with a number of like ones, you will find embodied in an article in the February number of the 'New York Medical Monthly,' from the pen of an industrious and capable observer, Dr. Wm. C. Rogers, of Green Island, Albany co., New York.

"Case 1.—A woman, with the intent of infanticide, buried her child, just after delivery, in the earth. After forty-five minutes had elapsed it was discovered and disinterred. It was found lying on the placenta, which was still attached, and was restored to life.—Quoted from the 'Gaz. des Trib.,' Feb. 20th, 1850.

"Case 2.—A woman died in labour. Her attending physician, Dr. Thornton, reached her after death and delivered by version, the child being delivered forty-five minutes after death. It was still, but was resuscitated after artificial respiration had been practised for half an hour.—Quoted from the 'Cincinnati Lancet and Obs.'

"Case 3.—A woman died in ninth month of pregnancy; the Cæsarean section was performed fifteen minutes after death, and the child resuscitated.—Quoted from the 'Med.-Chir. Trans.,' vol. xii.

"Case 4.—A woman died in eighth month; child delivered fifteen minutes after, was resuscitated, and lived.—Quoted from 'Berlin Med. Zeit.'

"Case 5.—Dr. J. Foster Jenkins, of Yonkers, New York, delivered a child, the funis of which had prolapsed into the vagina and been pulseless for twenty-five minutes before birth. After birth no effort at resuscitation was made for thirty minutes, and after *two hours* of exertion the child was restored to life.

"This array of facts might be trebled in length, but to what purpose? One well-recorded case would serve to prove that *it is possible* for the neonators, born still, to be restored to life even after passing an hour, and probably more, without respiration, under the most unfavorable circumstances. It is easy to scoff at such evidence and meet it with the smile of incredulity, but you will not be so inclined, when I tell you that the most remarkable of them are reported by gentlemen whom I know well—Drs. Jenkins, Thornton, and others; and that more reliable observers do not grace our profession. Receive these facts in the proper spirit, namely, by a candid avowal that he who neglects to use every means to resuscitate a stillborn child which has been delivered within an hour from the time he sees it, *is committing a flagrant dereliction of duty.*

"Another important deduction may be drawn from the study of these cases; it is with reference to the period which should elapse before we desist from our attempts at restoration, if no appearance of animation crown them. The average period intervening in Dr. Rogers's cases between birth and the establishment of respiration was thirty-five minutes and thirty seconds. In one case ninety minutes, in two seventy, and in several forty-five, elapsed before the respiratory process was established.

"How forcibly do these facts appeal to the conscientious and scientific obstetrician, how plainly do they teach him, nay *command* him, to persevere in his efforts, hoping even against hope, until all chances of success have vanished!

"As I have already stated, in the vast majority of cases where the fœtal heart has ceased to beat your efforts will fail to accomplish the end in view, but one success outweighs a thousand failures, and the demand upon our exertions remains unshaken. He who neglects to use every means in his power to save life is almost as culpable as he who destroys it, and who can tell whether the case which falls to his lot might not be attended with the same success as blessed those of Jenkins and Thornton, if the same energy and perseverance were brought to bear upon it?

"For your guidance under such circumstances it is difficult to lay down exact rules. Those which I would venture to offer you are these:

"1st. Should the heart be motionless and the child be to all appearance entirely and certainly dead, practise artificial respiration and the other means advised for from fifteen to thirty minutes; should the heart after this lapse of time not have acted, there are no reasonable grounds for hope.

"2d. Should the heart act ever so feebly, *let no limit bound the period of your labours*, but continue them so long as the faintest throb be perceptible to the ear when placed against the chest.

"3d. Should the heart have beaten during your efforts, or at their commencement, and have subsequently ceased, continue them for an hour at least before relinquishing the child to the possession of death."

ART. 156.—*Illustrations of Puerperal Fever.* By Dr. EDWARD COPEMAN, Physician to the Norfolk and Norwich Hospital, &c.

(8vo. London, Churchill, pp. 137, 1860.)

On a former occasion Dr. Copeman recounted twenty-one cases of puerperal fever, for the purpose of showing that turpentine is more to be relied upon in this affection than any other remedy. On the present occasion he records the history of thirty-six additional cases, in which the same plan of treatment was carried out with the same results. All these cases, new and old, were attended in consultation, and therefore it may be supposed that they presented some difficulties which induced the medical attendants and the friends to seek for further advice; and yet of the total number of fifty-seven, thirty-eight recovered, and only nineteen died. With such a result, without reading the cases, it might well be questioned whether the cases were really instances of puerperal fever; but after reading them, such questioning is out of place. In all the cases, indeed, we find rigor, abdominal or uterine pain, uneasiness or tenderness, rapid pulse, disordered sensorium, tympanitic body, depraved lochial secretion—symptoms abundantly sufficient to show what was the matter. But it may be said the malady in some of these cases may have been *intestinal irritation* merely. In answer to this objection, Dr. Copeman asks—

"Why seek to explain away the advantages of a successful mode of treatment by assuming for the disease a name which after all has no very definite meaning? What is implied by this term *intestinal irritation?* If it means a disease which produces a train of symptoms not to be distinguished from those accompanying puerperal fever, then I will consent to it, but under the protest that the same thing ought not to be signified by different appellations. But if it be intended to denote some other condition which, although accompanied by the same train of symptoms, is not the same fatal disease, but some milder form of disorder not dangerous to life, then I must confess my inability to distinguish between the two, and declare my unwillingness to risk a valuable life by attempting to make out a distinction without a difference, or omitting a plan of treatment which appears to offer by far the greatest chances of recovery. A gentleman told me, the other day, he had a case which made him feel very uneasy, fearing it would turn out one of puerperal fever; his patient had many of the usual symptoms, and he began to see danger: but he gave her half an ounce of spirits of turpentine and half an ounce of castor oil, the result being that she had free relief from the bowels, followed by considerable amendment, and he supposed it might be only a case of intestinal irritation. Now, that gentleman had witnessed several of the cases published in this work; he here adopted energetically the treatment advised in it; would he on any future occasion venture to treat a similar case without turpentine, on the ground that it might be only a case of intestinal irritation? I think I know enough of him to answer this question in the negative, and to feel sure that the interest he always displays for the welfare of his patients would not allow such a doubtful theory to weigh in his mind for one moment, to the neglect

of what he has found a successful mode of practice. Let us, for an instant, inquire a little more minutely into this idea of *intestinal irritation*, and see what it really means.

"Intestinal irritation is a common accompaniment of fevers of almost every description; of some it may be the cause, of others the consequence; but even in typhus, where inflammation and ulceration of portions of the intestinal canal frequently lead to a fatal issue, these do not give the name to the disease; yet there would be far greater reason for calling cases of typhus cases of intestinal irritation than those of puerperal fever, were we to be guided by the pathological appearances resulting from these diseases respectively. But as far as I can ascertain, intestinal irritation, as applied to the cases I have described under the head of puerperal fever, means constipation or overloading of the intestines by accumulated and retained fæcal matter. That this state of bowel is a frequent concomitant, and sometimes perhaps a predisposing cause, I am quite free to allow, and so it is of a number of other visceral inflammations; but at the same time I do not admit the possibility of this condition *of itself* producing the various symptoms which essentially belong to puerperal fever, and which form a principal part of the description of every case I have reported. No doubt a loaded colon or rectum, or both, must of necessity aggravate other symptoms, must especially aggravate inflammation of the uterus, both from direct pressure and from encouraging general abdominal congestion, and the relief obtained by the removal of the scybalous contents of the bowels is almost always striking and decided. But this is not the kind of intestinal irritation which in reality belongs, as it were, to puerperal fever; on the contrary, the latter is of a directly opposite character; for in unfavorable cases there is no more frequent or dangerous symptom than diarrhœa; it is almost always the precursor of death, and almost always uncontrollable under any of the usual modes of treatment. Woe be to the success of those who, under the mistaken idea of a case such as I have described being one of intestinal irritation, should administer potent, and especially mercurial, purgative medicines, so as to induce diarrhœa! I will venture to say no after-care or skill in treatment will remedy the fatal error, and the practitioner will be doomed to the disappointment and vexation of losing the valuable life entrusted to his keeping.

"I feel assured the term intestinal irritation is not applicable to cases such as I have described; the phenomena they discover to our view cannot be explained on such a supposition, and the mere unloading of the bowels without the use of turpentine would be quite inadequate to their removal. Consider for a moment what various conditions of the bowels are described in the foregoing cases; in some there was constipation, in others, both sickness and diarrhœa, and in others still, almost every variety of state between these two. Neither constipation nor diarrhœa is a sufficiently constant symptom to lead to its occupying any very prominent place amongst the characteristic ymptoms of the disease; and only experience is required to prove that, over and above any supposed amount of intestinal irritation, there is an enemy lurking behind, who, if unobserved, will, in spite of

all attempts to remove intestinal irritation, sooner or later strike home with such unerring aim as to baffle all attempts to avert the deadly blow."

— What had best be done is to get the book and study the cases for themselves; and with this recommendation we shall merely add that the turpentine is given by draught (one drachm for a dose) or enema, or in both ways at once, and that it is also applied as stupes to the abdomen. Simple water, or brandy and water, is recommended as the vehicle by which it may be most conveniently introduced into the stomach.

ART. 157.—*On the risk to life of first and subsequent Pregnancies.* By Dr. ROBERT BARNES.

(*Trans. of the Obstetrical Society of London*, vol. i, 1860.)

What is the risk to life of a *first* pregnancy? "It is the practice of assurance companies," writes Dr. Barnes, "to charge an extra premium for pregnancy. But if it is true that first pregnancies are more hazardous than subsequent pregnancies, the question may arise whether the usual extra charge is sufficient to cover the risk." Further, "It seems probable that a larger proportion of women in their first pregnancy are led to assure their lives, than of those who have entered upon a second or subsequent pregnancy. If, therefore, the extra premium be calculated on the general mortality in pregnancy, a serious fallacy may arise in practice, by taking at the average rate more than the average proportion of risk. There may, on the other hand, be a great and unnecessary hardship in rejecting such lives."

To settle this question, Dr. Barnes has recourse to the records of the Dublin Lying-in Hospital. In Dr. Collins's report, he finds that out of

16,414 deliveries, 164 women died = 1 in 100.

4,969 primiparæ, 80 women died = 1 in 63.
11,445 pluriparæ, 84 women died = 1 in 136.

And excluding deaths from puerperal fever, which affected primiparæ most,

Of 4696 primiparæ, 50 died, or 1 in 100.
Of the pluriparæ 58 died, or 1 in 200.

"Taking this experience," writes Dr. Barnes, "we should conclude that the risk of a first pregnancy is as two to one. But it is obvious that the experience of a lying-in hospital cannot furnish the data for the solution of this question. It is only in home practice, and, if we look upon the question from an insurance point of view, in practice amongst the easier classes, that we can expect to obtain the elements for a safe calculation. The experience of an obstetric physician who is often called in consultation is so overcharged with hazardous cases, that it is not easy to classify it so as to show ordinary risks. But the experience of a large number of gentlemen engaged in family practice might be so classified.

"I would suggest the following tabular form, as one suited to embrace the information required:

Table showing the mortality of women in first and subsequent pregnancies, with the causes of the mortality.

	No of women delivered.	No. of deaths.	Causes of each death, with age, and other particulars of fatal cases.
1st pregnancy .			
2d " .			
3d " .			
4th " .			
5th " .			
6th " .			
7th " .			
8th " .			
9th " .			
10th " .			
Exceeding 10th pregnancy .			

"If I were to give my own impressions, I should say that the risk of a first pregnancy is certainly greater than that of a second, third, or fourth. Women lying in for the first time have to prove their puerperal capacity. At the first delivery they encounter those difficulties which arise from faulty pelvic conformation, and those perils which arise from constitutional defects. These difficulties and perils, if surmounted, being revealed at the first labour, may in some cases be averted or lessened in the future. There can be no doubt that women pregnant for the first time are more liable to difficult labour and its consequences, such as exhaustion and phlebitis, to convulsions, to complications calling for instrumental aid. Women who have gone through one labour, or two, or perhaps three, without complications, may be regarded as running the least risk from pregnancy. But after the fifth labour I believe it will be found that the risk begins to rise rapidly, so that in the eighth or subsequent pregnancies the risk will be fully equal to that of a first pregnancy. Pluriparæ, according to my observation, are more especially liable to malposition; to retroversion of the uterus, to hæmorrhage from placenta prævia, from accidental previous separation of the placenta; and also from atony of the uterus. They are more liable to disease of the uterus and attendant disease of the placenta, leading to adhesion and hæmorrhage. And not seldom they enter upon labour with minds depressed and powers impaired by the inroads made upon their constitutions by previous child-bearing and the cares of maternity. But I must refrain from pursuing general impressions, the object of this brief communication being to elicit from others an experience large enough to justify precise conclusions."

ART. 158.—*A case of Spurious Menstruation during Pregnancy.* By Mr. J. JARDINE MURRAY.

(*Edinburgh Medical Journal*, March, 1858.)

The following case is interesting, as it shows what is probably the true nature and origin of the fluid in *some* of the recorded instances of so-called menstruation during pregnancy.

CASE.—At ten a.m., on the 15th March, 1857, I was called to Mrs. Eliza White, æt. 22, the wife of a mason. The messenger stated that the case was one of flooding, with threatened miscarriage.

I found the patient in bed, the bleeding checked, and the pulse full and good. On examination, the os uteri was ascertained to be so fully dilated as to be hardly palpable, the membranes were tense, and the head presentation was readily made out by *ballottement*. The movements of the fœtus were felt on placing the hand over the abdomen; and, on auscultation, the pulsations of the fœtal heart and the uterine souffle were heard.

The patient was nursing her first child, a fine boy, born on the 11th May, 1856, and therefore ten months old. She had nursed this child from his birth, and he had lived mainly on his mother's milk.

In answer to my questions, she stated that she first menstruated when eighteen years of age, and that her catamenia had returned every four weeks till shortly after marriage, two years ago. Each menstrual period was usually of three days' duration, and not attended with much pain or inconvenience. During her first pregnancy she did not menstruate, nor was there an unfavorable symptom. She further stated that, after the birth of her first child, she was not unwell till the Christmas week, when the discharge lasted three days.

On the 18th of February, *i. e.* about eight weeks afterwards, a second discharge of bloody fluid occurred, similar to the preceding, but lasting a somewhat shorter time.

She had no suspicion of being pregnant till quickening, which took place two months before. Since that event, she had been daily reminded of the child's presence by its frequent movements.

Her present labour-pains were brought on by imprudent exertion at a convivial meeting in a friend's house on the previous evening. According to her own account, she must have danced during three or four hours; and, when we consider the energetic manner in which persons in her rank of life take dancing exercise, it is not difficult to believe what she states—that towards the close of her performance she was much exhausted. That night she had soreness in the back, which soon passed into the severe intermittent pains indicative of uterine contraction. Towards morning, bleeding came on, when, as already stated, I was sent for.

Although, from the great dilatation of the os uteri, I thought it improbable that the threatened abortion could be prevented, I administered a full opiate, insisted on free ventilation and light covering, attended to the condition of the bladder and rectum, allowed only cold drinks, and enjoined absolute quiet.

In the evening, I found that the patient had obtained a few hours' sleep. The pains had, however, returned, and were recurring at intervals of ten minutes. About 8 p.m., she was delivered of a fœtus and placenta, about the sixth month. No unfavorable symptom followed. She continued to nurse her first child.

Being anxious to ascertain the origin of these discharges in the case already described, I carefully examined the membranes and placenta. Two strips of lymph were detected, overlying partially atrophied placental structure. It was evident that organization of lymph had followed each of two distinct separations of an edge of placenta from the walls of the uterus.

The lesions are illustrated by a woodcut. On the right-hand margin is represented the larger lamina of organized lymph which covers the more thinned edge of placental structure. It is conjectured that the separation of this edge of placenta occasioned the first onset of hæmorrhage, which was also more copious and longer continued than that which subsequently occurred. Since this edge is the more wasted of the two portions which had become inactive from rupture of their uterine attachments, we may conclude that it was the portion first separated from the walls of the uterus; for, after such separation, the placental structure could no longer perform its functions, and would become atrophied, like any other part no longer functionally active.

On the left is the less extensive surface of lymph, which appears to be of more recent origin, from the fact that the structure underneath is less wasted. The separation of this edge of placenta probably caused the second and less severe attack of hæmorrhage.

I was thus led to make further inquiries concerning the discharges in question, and obtained the following additional information:

The first discharge appeared towards evening, while the patient was seated in an omnibus, on her way to visit some friends at a distance. During the day, she had been putting her house in order, and had strained herself in carrying a heavy cradle, containing her baby, across the room. The discharge was rather more sudden in its appearance, and more copious than her menstrua were wont to be; but, not suspecting pregnancy, she considered it simply a return of her courses. There were no coagula. She thinks the stains were somewhat darker than usual, probably from the linen being soaked with a larger amount of blood.

The second discharge very closely resembled an ordinary menstruation in quantity and duration. It commenced on the afternoon of a washing day, and was not particularly sudden in its accession. She observed no coagula.

It is therefore evident, that a correct view of this case leads to its being placed under the head of "accidental hæmorrhage," and not of "menstruation during pregnancy."

Had it not been my good fortune to obtain the fœtus and placenta for subsequent examination, or had the placental lesions been overlooked, the case would have stood in my note-book as an instance of the occurrence of the catamenia during the third and fifth months of utero-gestation. And it is extremely probable that, if many of the reputed cases of this nature had been more carefully sifted, the discharges would have been found to differ from those to which the female is naturally subject.

Art. 159.—*On the Lineæ Albicantes of Puerperal Women.* By Dr. Credé.

(*Monatsch. f. Geburtsk.*, B. xiv, 1859; *Med.-Chir. Review*, Oct., 1860.)

Dr. Credé was induced to give the following results of his observations on this subject, in consequence of the (as he considered it) too indiscriminate statement made by Caspar, in his 'Handbook of Juridical

Medicine.' Dr. Credé states that the lineæ albicantes are formed in very different degrees in the majority of pregnant women, but are very seldom observed during the first half of pregnancy, and often only during the last or the penultimate month. During his management of the obstetrical department of the Berlin Charité, and at the Leipsig Obstetrical School, he paid particular attention to the matter, and the general result was that these white, cicatrix-like lines were observed in 90 per cent. of the cases examined; and they have very rarely ever been met with during the first half of pregnancy. They are generally disposed with some regularity, radiating from a mesial point that is placed about one or two inches below the umbilicus. With the expansion of the abdomen, the lines often become more irregular and unequal on the two sides.

After delivery they put on another appearance, but do not entirely disappear. The freshly produced streaks, especially in primiparæ, are of a shining, bright reddish appearance in women having fair or red hair, and brownish in those whose hair is darker. The redness is lost sometimes only a few days after delivery, leaving a dirty-white appearance, accompanied by wrinkling of the skin. On the occurrence of a new pregnancy, however, or when the abdomen becomes distended from any cause, the streaks exhibit a shining whiteness, with here and there a brownish tinge.

In several instances no traces of these appearances are discernible, even after repeated pregnancies, and the result of Dr. Credé's most careful examination went to show that these lines were absent in 10 per cent. of the cases he examined expressly to ascertain the fact; of these cases, $7\frac{1}{3}$ per cent. were primiparæ, and $2\frac{1}{3}$ per cent. multiparæ.

These streaks are sometimes formed only during the second or third pregnancy, or new ones may become added to those already existing. This may be owing to the greater distension the abdomen has undergone in subsequent pregnancies. In general, it will be found that the woman in her first pregnancy was not strong, and had not carried her child to its full time. It is at all events common for a woman who has gone through a normal pregnancy, without these lines appearing, to have them manifest themselves on subsequent occasions; on the other hand, it is not uncommon for those who have aborted at the fifth or sixth month, to first exhibit them at the end of a subsequent pregnancy. That these marks, when once formed, ever disappear, Dr. Credé does not admit, and consequently denies the correctness of the statement that they are met with more abundantly in primiparæ than in multiparæ. They are only more plainly seen on account of their brighter colour.

The lines may also appear as a consequence of various diseases which give rise to great and sudden distension of the walls of the abdomen; and this not only in aged women, but also in young persons who may very well become the subjects of juridical investigation.

Lines of exactly a similar appearance which occur on the breasts, thighs, buttocks, or calves of the legs, equally deserve consideration with those observed upon the walls of the abdomen. Montgomery has especially dwelt upon the importance of the sign derived from the coincidence of the lines on the breasts and abdomen. Dr. Credé's observations have convinced him that their presence is of much seldomer occurrence on the breast and other parts named than on the abdomen.

ART. 160.—*On Ovarian Gestation.* By Dr. A. WILLIGK.

(*Vierteljahrsch. f. d. Prak. Heilk.*, 1859; and *Med.-Chir. Rev.*, April, 1860.)

Should the views of Professor Williglk be confirmed, the current opinions concerning ovarian gestation must undergo considerable change. He agrees with M. Mayer, in doubting the existence of this form of gestation. Professor Williglk notices a recent case of alleged ovarian gestation, published by M. Alquie, in which he found "ten embryo sacs, with fat, hair, skin, cartilages, and bones," from which he concludes that there was a tenfold impregnation. The improbability of ten ova at once is urged against the admission of this case. In others, he urges that the microscopic examination has been omitted, leaving it a matter of doubt as to the correct description of the matters found. In examining a preparation in the Olmutz Museum, labelled ovarian gestation, he found in the right ovary a cavity the size of a hen's egg, to the lining of which a body was attached by a pedicle supposed to be a fœtus of seven weeks. This proved, under the microscope, to be nothing but connective tissue of the cyst wall, and the fœtus, a solid mass of the same. Another case proved a similar deception.

The professor demands, as a condition for admitting a case as one of ovarian gestation, that the fœtus itself, or undoubted remains of it, shall be found within the fibrous capsule of the ovary; and says no case has yet guaranteed the existence of this variety of extra-uterine gestation. He analyses several other cases, and disposes of one by Kiwisch, by comparing it to a case in the museum, examined and figured by himself. The right Fallopian tube is closed at its free end, and bears traces of adhesion; the right ovary has a scarred surface, and contains several Graafian follicles and corpora lutea; the two leaves of the broad ligament of the left side inclose a round sac, the anterior wall of which shows a wide irregular rent. This sac contains, besides clots, an embryo partly surrounded by the amnion; the internal surface is nearly covered with fine chorion villi, which at one spot are developed into a placenta. When the posterior fold is traced back, its direct course over the left ovary is seen. This ovary is inseparably united with the abnormal embryo sac, its surface being marked here and there with threads of connective tissue. This case is one of gestation between the folds of the broad ligaments, and he suggests that the one related by Kiwisch is of the same kind.

ART. 161.—*Lectures on the development of the Gravid Uterus.* By Dr. W. O. PRIESTLEY, Lecturer on Medicine at the Grosvenor Place School of Medicine, Physician-Accoucheur to the St. Marylebone Infirmary, &c.

(8vo, Churchill, pp. 110, 1860.)

Dr. Priestley has exhausted the subject of which he treats, particularly in its histological bearings; and these lectures are calculated to interest and instruct many besides the students to whom they were orally delivered. In proof of this, we would instance what is said upon the ready separation of the decidua, the arrangement of vessels in the young

placenta, and the development of the uterine mucous membrane after parturition.

"The decidua being composed of so lax a tissue, and being so freely supplied with blood-vessels, is particularly liable, during the early part of pregnancy, to effusions of blood into its parenchymatous substance, which may be determined by accident or disease. Notwithstanding the uterus is so suspended in the maternal pelvis that it is affected in the least possible degree by ordinary locomotion, and by the various changes in the position of the body, yet the union between the pregnant uterus and its lining membrane is so unstable in some women that a fall, a leap, or a stumble, may be quite sufficient to detach a portion of the latter, and give rise to sanguineous extravasation. Small and circumscribed clots produced in this way are sometimes found between the uterus and decidua. These, if limited, may not interrupt the continuance of pregnancy, but if the effusion be more extensive, and separate a larger portion of the decidua, it necessarily interferes with the nutrition of the ovum, produces death of the fœtus, and precipitates abortion. Again, if the escape of blood from the vessels is confined to a limited space at the upper part of the uterus, although it may produce much pain, no external hæmorrhage may be noticed at the time of its occurrence; but when it takes place near the cervix, the blood more readily finds exit from the uterus, and is discharged by the vagina. In aborted ova you may frequently observe blood-clots, which have been formed at different times, undergoing various changes in consistence and colour, according to the date of their effusion. Some have a deep purple colour, some a chocolate brown, others a yellow hue. Generally, the recently expelled ovum, if enveloped in the decidua, is covered over with thick layers of fibrine, which need to be removed from the dorsal surface of the latter before its proper texture can be discerned. Even then the tissues may be so condensed and injured by the pressure to which they were exposed during expulsion, that they may not be readily recognisable, and may need maceration in water for some time before they can be examined with advantage.

"Occasionally in the first weeks blood pours directly into the decidual cavity; fills it with a coagulum, and obliterates all trace of the embryo, constituting one of the species of mole, which is thrown off as a triangular cast from the uterus, and has firm layers of fibrine externally, with a soft clot in the centre. A not uncommon appearance is that in which the cavity and both layers of decidua are infiltrated with blood, become firm by coagulation, and nodular concretions project under the chorion towards the chamber which contains the fœtus. This form is designated by some authors the apoplectic ovum. It is a modification of the same morbid change which produces the other varieties I have described, and caused by the extravasation and hardening of the maternal blood in the substance of the decidua. An embryo is sometimes found attached by its funis to some part of a smooth central cavity; but many times it is absent, a rudimentary umbilicus being the only trace of its previous existence."

* * * "During my residence in Edinburgh, my friend, Dr. Sidey, brought to me a perfect ovum, in the second month of gestation, which had just been expelled from the uterus. It had evidently suffered little during its expulsion; the decidua uteri being almost entire, and bearing

everywhere on its outer surface the glandular and vascular apertures peculiar to the membrane in a normal condition. The decidua ovuli nearly approached the decidua uteri, but there was yet a distinct intervening cavity. The placenta was in progress of formation, and all the vessels were gorged with blood. In repeated sections through the circumference of the placental portion of the ovum I found the tufts of the chorion deeply rooted in the decidua, and around each separate villus was thrown a maternal vascular loop, formed of a capacious capillary, distended with fluid blood. Loop was connected with loop in such a way way that a plexus was formed; the vessels thus enclosing spaces which were occupied each by a separate villus. I could trace the smaller branches back to larger trunks, and remarked that sometimes the twigs given off on each side at once assumed the arched form, and could occasionally be detached from the villi, which they encircled, as shown as distinct tubes. Other branches crossed at right angles to the villus trunks, and passed onwards to enclose the extremities of a more distant tuft. The villi had, as usual, a cellular external structure, and a clear space always intervened between the darker outline of the villus and the maternal vessel, which was occupied by a layer of transparent cells.

"Fœtal capillaries were already present in the interior of the villi themselves, and could be seen here and there containing red blood; they appeared at this time, however, as single loops formed of a straight tube bent upon itself, and possessed none of the convolutions visible at a later period. Although the celebrated Virchow has shown that the maternal vessels undergo a rapid increase in size, I am not aware that any one has previously described this particular vascular arrangement in the young placenta. It is especially interesting, as it apparently forms a connecting link between the small vessels ramifying in the early decidua, and the large maternal sinuses which are present in the placenta at a later period. It suggests, also, an explanation of the way in which the sinuses are formed, and may account for their relation to the villi in a full-grown after-birth."

"The summary of conclusions respecting the development of the uterine mucous membrane after parturition are as follows:

"1. After an ordinary labour, terminating in separation and expulsion of the secundines, the muscular substance of the uterus is nowhere laid bare, as some authors have supposed, nor is there any inflammatory false membrane spread over the surface. As Dr. Duncan has correctly pointed out, the interior of the uterus after parturition only bears analogy with the stump after amputation, inasmuch as both have large open vessels liable to be inflamed and to absorb noxious materials.

"2. When the membranes are thrown off in the third stage of labour, a portion of the decidua remains attached to the uterine surface as a protection against external agencies. It is not, however, strictly correct to assert that original mucous membrane may be found everywhere lining the interior of the uterus after delivery; this is true only with regard to the cervix. The mucous membrane of the body, and fundus of the womb, were transformed into decidual structures at the commencement of pregnancy, and the laminæ of decidua found covering the surface of the interior of the uterus after delivery has not the texture, nor can it fulfil the functions, of a mucous membrane, but consists of an arrange-

ment of cells, fibres, and fat-granules, identical with those recognised in the decidua in the later period of pregnancy.

"3. A new mucous membrane begins to be formed in the later months of pregnancy between the decidua and muscular coat. It undergoes a rapid development after the uterus is emptied of its contents; and as it is gradually perfected, it assumes the function of the original mucous coat. During the process, the remains of the decidua undergo further fatty change, and are slowly shed off to mingle with the lochial discharge.

"In cases where dysmenorrhœal casts and early ova are expelled from the uterus, the conversion of the mucous membrane into decidual structures is probably less complete, and the deep stratum remains behind to prevent the denudation of the muscular coat."

(B) CONCERNING DISEASES OF WOMEN.

ART. 162.—*On the Sponge Tent as a means of treatment in Sterility.* By M. PFEIFFER.

(*L'Union Médicale*, Juin 28, 1860.)

M. Pfeiffer refers to a case in which Professor Stolz, of Strasburg, made use of this means of treatment with a satisfactory result. A lady had been married four years without family. On examination, the cervix uteri was found to be very rigid and contracted. Tents of prepared sponge, with occasional warm baths, were used; two months after trying this treatment she became pregnant, and in due time was delivered of a fine boy. May not this mode of treatment, M. Pfeiffer asks, be preferable to the division of the cervix, recommended by Dr. Simpson, of Edinburgh?

ART. 163.—*On the Advantages of Anti-syphilitic treatment during Pregnancy.* By M. DANET.

(*Jour. of Pract. Med. and Surgery*, Sept. 1860.)

In the official correspondence of the Parisian Academy of Medicine is a short communication from M. Danet, on the advantages of anti-syphilitic treatment during gestation. This physician states that a lady aged twenty-three, whose husband was affected with syphilis, had twice been delivered of still-born children, in a state of decomposition. When she became pregnant a third time, and had reached the end of the fifth month, she called in M. Danet. The husband was again under the influence of the syphilitic diathesis, and M. Danet, in opposition to the opinion of other practitioners, prescribed for the young woman an anti-syphilitic treatment.

He exhibited one sixth gr. iodide of mercury, together with extract of opium and bark-wine with chlorate of potash. The first pill induced colics; on the seventh day, he was obliged to suspend the treatment; but, convinced of the danger incurred by the child if things were allowed to take their course, M. Danet tried another form of medication, and ordered h [illegible] aspoonful of liq. hydrarg. bichlorid. to be taken daily in

two doses. The mercury was now borne, and was progressively increased to three teaspoonfuls a day, a dose which was continued up to the conclusion of pregnancy. This lady lately gave birth to a female child, perfectly constituted and healthy.

ART. 164.—*On a Puerperal Epidemic at the Würzburg Obstetrical Establishment.* By Dr. O. VON FRANQUE.

(*Scanzoni's Beiträge*, Bd. iv; and *Medical Times and Gazette*, July 14, 1860.)

In this paper the author gives an account of an epidemic of puerperal fever which occurred at Scanzoni's Midwifery Institution at Würzburg during the months of February, March, and April, 1859.

The establishment is of quite recent institution, and is placed in one of the healthiest parts of the town, being surrounded by gardens, and well exposed to the air. It is well constructed, and upon an average contains 30 pregnant women (besides a few others suffering from disease), from 350 to 360 births taking place annually. During the three months now referred to there were 99 deliveries, and the forceps were applied four times, and turning was resorted to once. Of these 99 women 30 became the subjects of puerperal fever, 9 of them dying. Besides these one of the women died of phthisis, and one from eclampsia. Of the 102 children born, 8 were born dead, and 9 died subsequently.

With respect to the epidemic itself precursory indications were met with at the end of 1858 and the beginning of 1859, for without their assuming the character of puerperal fever, mild forms of endometritis and peritonitis, especially the first, were observed. They were, however, purely local manifestations of short duration and favorable termination. These slight affections disappeared towards the end of January, true and severe puerperal fever appearing at the beginning of February. About this time, too, irregularities in the parturient process were of frequent occurrence. These consisted in deficiency of pains, and still oftener in irregular spasmodic contractions, spastic contraction, and rigidity of the os uteri. In some of the fatal cases this last condition was the cause of that excessive prolongation of the labour, which, independently of other complication, is a powerful predisponent to the disease. Another condition often observed during the prevalence of these epidemics was not wanting here, viz., hæmorrhage occurring speedily after labour. Almost all the women delivered during these three months had more or less considerable hæmorrhage, dependent upon defective involution and contraction of the uterus. The organ remained large and soft, showing not the slightest disposition to contract. Puerperal affections exhibit themselves under two principal forms—viz., with hyperinosis of the blood, and with primary dissolution of the blood. The latter form was only observed in any considerable degree in two cases, which were very acute, both proving fatal. It is remarkable that the most acute of all the cases, in which death occurred within twenty hours after delivery, occurred at the beginning of April, when the epidemic had already given signs of diminishing. The cases connected with a hyperinotic condition of the blood pursued a less rapid course. The first appearances of disease were manifested on from the second to the fifth day, commencing either in the form of a localised endometritis or peri-

tonitis, or more commonly still, of the two together. There were twenty-eight cases of this form, of which number seven proved fatal; these seven cases remarkably resembling each other in the nature and course of the diseased process set up. In one of the seven puerperal mania occurred during the height of the febrile action on the third day, and the patient died on the ninth day. The treatment adopted consisted in local bleeding, cataplasms, mercurial frictions, warm baths, and small doses of calomel and opium. The post-mortem appearances were very similar—viz., a large relaxed uterus, with its cervical portion softened, and its inner surface lined with diphtheritic or gangrenous deposit; fibro-purulent exudations in various parts of the cavity of the abdomen; an enlarged spleen; and a dark, fluid blood in all the veins, the heart, and the cerebral sinuses exhibiting, therefore, the signs of a dissolved condition of the blood, which, however, in these cases, was not primary, but the result of the continuation of the diseased process. In the milder cases, cataplasms were only employed, and phosphoric acid given with the beverages; local bleeding, and especially warm baths, being resorted to when the local pain proved excessive. The majority of the patients were dismissed from the wards after undergoing treatment for ten or twelve days. There were also cases of febrile action without any special local manifestation; and others in which, together with a moderately rapid pulse, more or less prostration, and a general feeling of malaise, there was an abnormal enlargement of the abdomen, without even strong pressure made upon it giving rise to any pain. The involution of the uterus was performed with remarkable slowness, it remaining relaxed and to be felt above the pubis for a long period. All these cases terminated in recovery. One remarkable fact is, that in certain cases of labour, occurring during the height of the epidemic, in which, on account of the difficulty and prolongation of the labour, or the exhaustion of the patient, the worst prognosis was delivered, no ill effects whatever resulted. In fact, during the height of a violent epidemic, certain individuals who are not predisposed to puerperal disease may go through the severest labours, involving the most difficult operations, quite unscathed; while others, the whole course of whose labour has been perfectly normal, become the victims of the severest form of the disease.

As in other epidemics, not only did the pregnant and puerperal women suffer, but the same influence was exerted upon the fœtus and child. All the children who were born dead, or died soon after birth, exhibited the plainest signs of the diseased condition of the blood, of which they had become the subject while *in utero*. The blood was dark and fluid, the spleen was enlarged, and the umbilical arteries almost always contained pus.

As to the cause of the present epidemic, none other can be assigned than the prevalence of certain atmospheric influences, the intimate nature of which are unascertainable. If to this it be objected as a more probable circumstance that the disease may have resulted from the miasmatic influences generated within the walls of the institution itself, the reply is that such a conclusion can scarcely be admitted with respect to so newly built and well-contrived an establishment which has never been overcrowded with patients. Moreover, puerperal diseases pre-

vailed at the same time not only in Würzburg, but also in its vicinity, which were not, it is of importance to observe, treated by the same practitioners who were in attendance at the institution. To these facts may be added the greater prevalence of hæmorrhages, and the greater mortality from puerperal diseases, which took place at this time. An influence which has often proved very mischievous in Lying-in-Hospitals during epidemics, viz., the presence of numerous male individuals, did not come into operation here. Individuality, too, exerted no influence; for the feeble and the strong and healthy-looking were alike attacked; and, in fact, the fatal cases occurred among the most strong and powerful women, while the feeble suffered comparatively little.

ART. 165.—*Urticaria as a symptom of Irritation of the female Sexual Organs.* By Professor SCANZONI.

(*Würzburger Med. Zeitschr.*, Bd. i, 1860; and *Medical Times and Gazette*, Sept. 15, 1860.)

Professor Scanzoni observes that although it has long been known that chronic affections of the female sexual organs are not infrequently accompanied by skin diseases (as urticaria, eczema, acne, psoriasis, chloasma, &c.), the influence of a more sudden irritation of these organs upon the cutaneous surface is by no means so well established. He has been enabled to find no very definite statements upon the subject, and this leads him to communicate some cases tending to establish such a consensus.

A lady, æt. 34, had been under his care for some time with slight retroflexion of the uterus and chronic metritis, when he ordered four leeches to be applied to the vaginal portion of the cervix uteri. This little operation had been already performed once before without any ill effect, but upon the present occasion, ten minutes after the application had been made, the patient was seized with violent febrile action and slight delirium. In half an hour she was seen by the author, who found her skin, especially that of the face and upper part of the body, almost of a scarlet red. The temperature of the surface was considerably raised, and her pulse beat 136. She continued much the same during the night, and when seen next day, the face, neck, chest, arms, and thighs exhibited, together with the intense redness, innumerable urticaria elevations. In a day or two the exanthem had entirely disappeared, a distinct desquamation, however, taking place on the face and neck. As this was the first case the author had ever seen in which these symptoms followed the application of the leeches to the cervix, he did not believe in their dependence upon this, and again ordered them to be employed. Four times this was done without any unpleasant occurrence, but on the fifth occasion the whole series of symptoms above described were reproduced, and that so rapidly after the biting of the leeches that any doubt as to cause and effect could no longer be entertained.

In a second case, a woman, æt. 28, was admitted into the Würzburg Midwifery Institution, on account of chronic uterine infarctus, and five leeches were ordered to be applied to the cervix. Scarcely had they taken hold, when she complained of the most violent labour-like pains in the abdomen, and although these soon moderated in force, they were

accompanied with such intense febrile action that the entire body glowed with heat, the pulse rose to 140, the carotid pulsated visibly, and the face, neck, and chest exhibited an intensely red colour, to which were added in a very short time a large eruption of urticaria elevations of a palish colour. The eruption was accompanied by great headache, inclination to vomit, and excessive lassitude, symptoms which continued to the following day, although the exanthem with the accompanying fever disappeared entirely after three hours' continuance. This patient often had suffered from urticaria at the menstrual periods, without, however, its being accompanied by such violent symptoms.

The third case occurred in the person of a young lady, æt. 26, who, on account of long-continued chronic oöphoritis and metritis, required local blood-letting. In the course of sixteen months four or five leeches had been applied eight times. On the ninth occasion, an intense redness covered the skin, and the patient complained of the most violent pain in the head. The temperature of the surface was much raised, and it was almost entirely covered with innumerable, minute, prominent, white elevations. In the course of an hour these appearances gradually subsided, the headache continuing for twenty-four hours longer. The author is aware of a fourth case of the same kind, but is unable to furnish the particulars.

Professor Scanzoni believes that these cases deserve the attention of those occupied with the diseases of women, as well as of dermatologists. They admit of no other explanation than that the irritation of the uterine nerves, caused by the bite of the leeches, induced an entirely unusual, and in its mode of origin inexplicable, disturbance of the vascular system, which again, in a mode which is to us equally unintelligible, gave rise to the production of the eruption of urticaria. In proof that these appearances were not produced as a consequence of any poison being conveyed through the medium of the bite of the leech, it is to be observed that similar symptoms never result from the application of leeches to other regions of the body, while it is to be observed that even very slight irritation of the sexual organs, as that produced by examination with the finger or speculum, or by the application of caustic, will, in many very sensitive women, give rise to erythema of the face, neck, breast, &c., which disappears as rapidly as it comes on.

ART. 166.—*Reduction of an Inverted Uterus of six years' standing.* By Dr. BOCKENDAHL.

(*Deutsche Klinik*, No. 52, 1859.)

CASE.—A. L—, æt. 20, was taken in labour with her first child in December, 1852, and after the pains had continued in vain during twenty-four hours she was delivered with the forceps, the placenta coming away immediately afterwards. The funis was several times entwined around the neck of the child. The patient became faint, but is said not to have lost more than the ordinary amount of blood. For long after her delivery, the woman suffered from paralysis of the bladder, and also from swelled leg; and scarcely a day had passed during six years that she had not lost blood from the sexual organs, the menses also appearing about every four weeks. After various

kinds of treatment had been employed without avail, she was brought to the author in August, 1857, when, to his great astonishment, he discovered an *inversio uteri* in its second degree, *i.e.* within the vagina. The organ, about seven centimetres in length, lay like a pear in the vagina, resisted pressure, which produced no other effect than that of increasing the bleeding. A sharp-edged, circular fold of the vagina, closely surrounded the uterus, feeling, until more closely examined and its connexions traced, very much like an os uteri. The speculum exhibited the mucous membrane of the uterus of a deep red, blood oozing out. The vagina was pale, as were all the other mucous membranes of this anæmic woman. In all probability, the inversion had been gradually produced; and as, in the whole course of its production, there had never been any symptom of peritonitis, the author resolved, notwithstanding the completeness of the inversion and the density of the organ, to attempt reposition. After warm baths had been employed, he tried to pass in the entire hand; but this was found impossible, especially as the entry of the vagina had been narrowed by the cicatrix of a laceration of the perineum. The treatment was now interrupted, and the author did not see the patient until October, 1858. Fearing to employ hooks or other instruments, he kneaded the uterus daily with the fingers, loosening the tissues so as to be able to tilt the fundus uteri to a considerable height. The menses returning, the author saw no more of the patient until the end of November. In the meantime, he had perused Dr. Tyler Smith's case, and determined to try the effects of continued pressure, and consequently, on November 27th, introduced one of Braun's caoutchouc plugs into the vagina. It was removed daily, in order to ascertain the effect it had produced, then filled with water and reintroduced, and before closing inflated, so as to increase its circumference as much as possible. The instrument only caused some uneasiness for about two hours after its introduction. On December 2d, the patient complaining of some pain in the abdomen, the plug was removed, and an examination made. Great was the surprise, when the inverted uterus was found to have disappeared, an os uteri capable of admitting three fingers presenting in its stead, its two lips being well defined. Measured by the sound the uterus exceeded its normal length by more than six lines. By the use of the cold douche it soon contracted to its natural size, and the bleeding, which had so long persisted, ceased.

Art. 167.—*On Inflections of the Uterus.*

By (1) Professor Rokitansky and (2) Professor Virchow.

(*Allg. Wien Med. Zeitung*, No. 17, 1859; and *Med.-Chir. Rev.*, Jan., 1860.)

1. Professor Rokitansky begins by describing the vaginal portions of the uterus of a multipara, and the connected vaginal roof, as being formed out of a duplicature or folding-in of the vagina, in which the lower end of the uterus takes a part. So soon as the uterus has passed into the vagina, the latter surrounds it like a ring, forming an intussusception. In front, the doubling is shorter, and is attached by loose cellular tissue. Hence, the anterior lip is thicker, and the vaginal roof more shallow. After many labours the distinction becomes less. On section of the uteri of young persons, it is seen that the vagina, after it has formed the duplicature constituting the roof, is continued into the uterus. The mucous membrane and the layer of the two grow into the

corresponding tissues. A second, outer, loose, muscular, longitudinal fibrous layer of the vagina goes outside, over the duplicature, and spreads over the body of the uterus. In more mature uteri, and those which have been pregnant, there is interposed between the mucous membrane of the cervex and the longitudinal muscular layer, a richer mass of uterus which ends in a point in the anterior lip of the vaginal portion. At the anterior side of the uterus runs the round ligament, separating into two muscular bands; the upper run together at the fundus, the lower under an angle in the neighbourhood of the os uteri internum, thus forming a lozenge-shaped space. At the seat of union of the lower bands, in uteri of this description, there strikes a band of about an inch broad, in the form of a bow, the fasciculi of which fix and enlarge the duplicatures. On the posterior wall of the uterus, the ascending band is continued over the cervix into the vagina; or there proceed, also, from the end of this band, in the neighbourhood of the os uteri internum, two strips of the form of a sharp bow, to the vagina. The strong mucous membrane of the cervix, and the thicker connective tissue on the posterior wall do not terminate at the os internum, but, becoming thinner, go on to the body of the uterus. This forms the support of the mass of the uterus, and the foundation of its upright position, and shares essentially in flexions. Inflexion of the uterus, forward or backward, always falls in the region of the os internum. Flexions of the cervix seldom happen. The stratum of connective tissue is always found less thick, looser, thinner, and even wasted away. Hence, anteflexion is more frequent and in less degree, as it grows to infraction; retroflexion is less frequent, but oftener in extreme degree, and very seldom grows to infraction. Anteflexion, moreover, most commonly appears in the virgin uterus, or at least it is apparently in no relation with labour; retroflexion, on the contrary, hardly ever rises but after repeated labours, or abortions.

2. Professor Virchow sums up thus:—At the seat of infraction there is found no primary alteration of tissue. Simple relations of pressure, distinguished from actual tumours, cause no anteflexions, but mostly retroflexions. Filling of the bladder and rectum cause distinct changes of position of the uterus. The changes are no longer possible when the body of the uterus is fixed at a certain height. In original shortening of a lateral ligament, there are found in children only lateral dislocation and inflexion; in persons beyond puberty, anteflexions. Anteflexions are more frequent in normal, retroflexions in pathological conditions of the uterine walls.

Hence, he draws the following therapeutical deductions: In the history of flexions there is a period of simple predisposition, one of simple flexion, and one of flexion complicated with various inflammatory processes; the predisposition is frequently given by partial forms of peritonitis, which appear with colicky attacks, and are apparently very difficult to mitigate; long retention of urine and fæces favour the formation of flexions, especially at the menstrual period, that of child-bearing, &c.; enlargements of the uterus, especially when united with relaxation, quickly cause flexions, and the removal of these may materially alleviate them; hence, the antiphlogistic treatment of uterine catarrh, and most careful watching of the menstrual and puerperal processes, are necessary; a complete removal of anteflexion seems in the highest degree doubtful,

while in retroflexion it may be expected. When flexion is connected with consecutive processes, as endo- and peri-metritis, a careful local treatment is necessary.

Virchow remarks upon the views of Rokitansky, as given in the preceding article, and does not regard atrophy at the seat of infraction as primary or essential, for in anteflexions of infantile and maiden subjects there is not the slightest alteration of the uterine wall to be found. He does not consider the anatomical description of Rokitansky as in all points correct; thus, the mucous membrane of the cervical canal cannot be called callous, for it is here relatively thin; it more resembles granulation tissue. The fibro-muscular tissue of the uterus is found as well in the body as in the neck; it contains more muscular fibres and vessels in the body, and more fibrous connective tissue in the neck. Toward the mucous membrane the muscular fibres in both places cease, and there is found a distinct, apparently thick, but in the normal state by no means thick, submucous layer.

Art. 168.—*On the treatment of Vaginitis by Glycerole of Tannin.* By M. Démarquay.

(*L'Abeille Médicale*; and *Nashville Journ. of Med. and Surgery*, June, 1860.)

This method, which M. Démarquay has employed with very satisfactory results during the last four years, consists in the application of pledgets of lint steeped in glycerin and tannin, according to this formula:

Glycerin	3 parts.
Tannin	1—2 parts.

The tannin is entirely dissolved by the glycerin, and the result is a substance of a beautiful brown colour, inclining to yellow, transparent, of a semi-liquid consistence, very readily imbibed by layers of charpie or of cotton, and, after application, not draining out from them, even when held in the vertical position. The application is made thus: the speculum having been introduced, water is freely injected, to remove all the mucus and pus which is spread over the vaginal walls, which are then dried by means of a pledget of lint attached to a stick. One or more tampons of wadding, well steeped in the tannated glycerin, are then introduced, followed by a dry tampon to retain any drops which may escape from the first. The speculum is withdrawn, and the patient left quiet till the next morning, when all are removed and again renewed. Four or five such applications complete the cure. As a precautionary measure, for a week longer the patient should make injections two or three times daily of a decoction of walnut leaves, with the addition of sixty grains of alum to the pound. When, in consequence of acute inflammation not permitting the introduction of the speculum, this application cannot be immediately made, the treatment should be commenced by an appropriate diet, baths, and soothing injections.

These tampons are neither painful, nor do they incommode the patient, who can remain in the upright position part of each day. The local effect is coagulation to a certain extent of the mucus-pus which is secreted; change of colour in the mucous membrane of the vagina, which loses its inflammatory redness; dryness of the walls, and tightening of the tissues; disappearance of pain and issue. Other physicians have employed it with like effect. M. Aran has tried simple glycerin, in the

form of injections into the womb and vagina, for ulcerations of the neck of the uterus, and uterine catarrh. The injections into the womb had to be discontinued, on account of the pain which they produced. It is possible that this was due to impurity of the glycerin.

ART. 169.—*Four cases of Injection of a Caustic Solution into the cavity of the Womb, illustrating the advantages and dangers of this proceeding.* By Dr. E. NOEGGERATH.

(*Contributions of Midwifery*, 8vo, New York, Bailliere, pp. 466, 1859.)

The volume from which this article is taken is composed chiefly of reprints from the 'New York Journal of Medicine' of Drs. Noeggerath and Jacobi's Reports on the Progress of Obstetrics, and of Uterine and Infantile Pathology, in 1858—reports so admirable that they well deserve to be thus preserved in a separate form. The article itself is one of seven original articles by Dr. Noeggerath or Dr. Jacobi, which articles are bound up along with the reports.

From a perusal of the four cases related by Dr. Noeggerath in the paper under consideration, it appears that in one of them no reaction whatever followed upon the injection of the caustic agent; that two exhibited very alarming symptoms; and that one of the two latter resulted in death. The two latter cases, also, seem to show that the dangers connected with intra-uterine injections are not so much derived from a passage of the fluid into the abdominal cavity, as from the direct influence of the caustic agent upon the uterus itself.

"In those cases where the milder caustics are applied, or where the organ has only a limited degree of susceptibility, the injection is followed by a more or less severe endometritis, which generally terminates by resolution. But under circumstances similar to those mentioned in the history of the cases reported, the inflammation seems to proceed to the deeper layers, the areolar, muscular tissue, and lastly to the peritoneal membrane lining the body of the uterus, thus terminating in the most disastrous form of metro-peritonitis.

"From this it would appear that we ought to abstain entirely from the use of caustic injections into the cavity of the womb. For if it is true that they are at times followed by dangerous and even fatal consequences, they must be considered as means inadequate to the evils which they are intended to relieve. I mean to say, that a complaint which is not endangering in a direct way the sufferer's life ought not to be attacked with a remedy that might possibly remove the disease and the patient at once. To this class of morbid alterations belong hypertrophy, ulceration, abnormal secretion, and fungoid excrescences of the uterine mucous membrane, conditions which have been often treated with caustic solutions. From this consideration, the treatment of violent hæmorrhages is naturally excluded; with regard to them we must act after the principle—aux grands maux les grands remèdes.

"In coming to this conclusion, I am far from advising against the use of caustics in general. All I want to impress upon my readers is the necessity of being cautious in their application, more cautious, I mean, than some of our obstetric specialists. There seems to exist a certain climax in the different remedies themselves; some of them,

although very effectual, are comparatively innocuous, while others are almost always followed by violent reaction. Among the former we count the tincture of iodine and some of the organic acids, such as tannin and benzoe; among the latter, the solutions of silver and mercury, as well as the stronger mineral acids. The remedy which most happily combines a high degree of innocuity and of efficiency is the tincture of iodine. I have had frequent occasions to inject it into the cavity of the womb, and as yet I have never remarked the least untoward symptom from its application. The use of a strong solution of nitrate of silver is almost always followed by a destruction of part or the whole of the mucous membrane, an incident which no doubt is at times required and intended for effectual treatment, and really, in many instances, this is perfected without any injury to the patient's health. It, indeed, seems that a solution which in one instance is very well borne, does produce the most alarming symptoms in another person. In this the uterus resembles the urethra of the male, which at times can bear manipulation with impunity, while again a single cautious application of the catheter may prove fatal. We should, therefore, ascertain the irritability of the womb before we attempt to apply one of the stronger caustics to its inner surface. This can be readily done by throwing a quantity of common water into the uterus, this test to be followed by a series of weaker and stronger irritating injections. A few trials of this kind will soon enable us to learn to what degree we are allowed to saturate the solution. Another advantage of these graduated injections is the fact of their diminishing the uterine irritability, thus preparing the womb for the reception of stronger solutions, in case they should be demanded."

Art. 170.—*A Contribution to the pathogenesis of Uterine Polypi.* By Dr. E. Noeggerath.

(*Contributions to Midwifery, &c.*, 8vo, New York, Bailliere, 1860.)

Case.—Mrs. F—, of New York, apparently a healthy woman, was delivered on the 12th of July, 1858, of a strong, living child, after a short and easy labour. She was attended by Dr. Rupprecht, to whom I am indebted for the history of this case. Soon after the child was born, the placenta was found lying in the vagina, near the os externum, and removed without the least difficulty. The doctor left in about an hour, but was scarcely at home, when he was summoned back to the patient in haste, as the woman was "swimming in blood." On his arrival, the hæmorrhage had already ceased spontaneously, the uterus was found well contracted, and as nothing seemed to indicate any further apprehension, the patient was quieted, and stimulating drinks ordered to be taken.

During the following days everything proceeded as well as could be expected, secretion of milk and lochial discharge in the best condition. At about the ninth day after this, the woman remarked another show of blood, which, however, did not seem to be serious enough to call for actual treatment. A strengthening diet, combined with the use of tonics, was recommended, and successfully so, as the discharge diminished, while the patient was gaining strength. But this condition did not last very long. After a lapse of four days, the blood began to flow anew, and in such quantities that it occasioned serious apprehensions. Under these circumstances, Dr.

Rupprecht insisted upon a thorough examination of the parts involved; on passing his forefinger into the vagina, he detected a large tumour filling the entire space of the vagina. The body was of the size of a large hen's egg, perfectly smooth, round, and somewhat flattened on its upper extremity, where it was firmly attached to the anterior lip of the vaginal portion. This attachment was so firm, that by moving the tumour, from right to left, the entire uterus was displaced sideways. This examination, although performed with the greatest care, produced an alarming increase of the hæmorrhage. From these symptoms, and his examination together, Dr. Rupprecht concluded that she was suffering from a polypus of the womb, which ought to be removed as early as possible. He accordingly prepared to perform the operation, with the assistance of Dr. Michaelis, who agreed with Dr. Rupprecht's diagnosis. But the patient insisted upon calling in a third physician. Consequently, Dr. P—— met them, and after examination, declared that the case was not one of polypus, but inversio uteri. But as neither Dr. Rupprecht nor Dr. Michaelis coincided in this opinion, it was decided to have Dr. Krackowizer's opinion. The latter gentleman began his examination with the forefinger, to which he added the third finger, in order to circumscribe more easily the entire surface of the protruding mass. He found that the lower surface of both uterine lips was imbedded in the tumour, and he confirmed in every other respect the results of Dr. Rupprecht's examination, as given above. In the process of examination, Dr. Krackowizer directed his fingers so that they held the vaginal portion between them; and when pressing downwards upon the polypus, he had the sensation as if something yielded, which induced him to increase the pressure, when suddenly the polypus separated from its place of attachment, and was easily extracted from the vagina, after which the hæmorrhage ceased entirely.

The polypus was removed on the morning of July 25th, and I had occasion to examine it on the same day at three o'clock, p.m. It was of a spherical form, its longest diameter being about 2½″. The entire mass was perfectly smooth, and seemed to be lined with a proper membrane. The continuity of this membrane was broken at the lowest section of the tumour, and on this portion a cleft ½″ long could be observed, which, running from right to left, partly disclosed a fibrous, blueish-white heterogeneous substance, which, upon closer examination, proved to be an obliterated blood-vessel. The upper aspect of the tumour, instead of being smooth like the rest, showed an irregular, rugged surface in its middle portion, of about the size of a fifty-cent piece. This place looked very much like a fresh granulating ulcer, and was undoubtedly the seat of adhesion with the uterus. The entire mass was solid, and as hard as the normal uterine tissue. Upon dividing its deeper portions with the knife, it offered the colour and consistency of muscular tissue, now and then interspersed with lighter tendinous stripes, which ran in every direction. We were altogether at a loss what to make out of this tumour, and it was left to the microscope to throw sufficient light upon its true nature. For when a small section of it was examined, it became evident that the whole mass consisted chiefly of shrivelled tufts belonging to the chorion. And, consequently, the polypus before us was nothing but part of the placenta. We must add, that the tumour was entirely free from any offensive smell.

"From the history of the case," says Dr. Noeggerath, "it appeared not only that the physician removed the after-birth without the least obstacle, but that it had already descended into the vagina, when its removal was attempted. This circumstance, as well as the regularity of its shape, induces us to believe, that the tumour in question was a

so-called placenta succenturiata. The time when this placenta was detached from the cavity of the womb must have been immediately (one hour) after delivery; it was preceded by a sudden and violent hæmorrhage, which ceased spontaneously. This symptom is always observed in cases where portions of the placenta or the membranes are retained in the womb, as every accoucheur will readily admit. After the mass had left the uterus, no hæmorrhage ensued until the ninth day. This was the time when reunion with the uterus was completed, and the oozing of blood, which set in now, was caused by the same circumstance that causes the bleeding in cases of genuine uterine polypi. That this adhesion with the womb was not a mere agglutination, but an organic union, is proven—1. By the fresh condition of the corpus delicti It is well known that no substance undergoes putrefaction more readily than the detached placenta, especially when deposited in the vagina, where it is in free contact with the atmosphere and the vaginal discharges. 2. By the smoothness of its surface and the rounded shape, an attribute proper to living organic tissues. 3. By the appearance of the granulated part on its upper plane, which might be compared with the raw surface of a tumour just removed by enucleation or torsion. 4. By the bleeding following upon its being touched with the finger.

"We therefore conclude, this is an instance of migration of a placenta succenturiata from the cavity of the womb, and re-attachment to its vaginal portion, with a tendency to be transformed into a uterine polypus. If the case had not been so promptly attended as it was by Dr. Rupprecht, if only its chief symptom, the bleeding, had been treated, as it is done too often under similar circumstances, the patient would have at the present day a polypus uteri, which, detached, perhaps, after a lapse of years, and removed with the knife, would not excite the least interest, the minute circumstances connected with the history of the case being lost and forgotten. Although not a few cases are recorded in our literature of placentas remaining in organic union with the uterus, we think that the observation just laid before our readers is unique in its way, and may perhaps serve to throw some light upon the pathogenesis of uterine polypi."

ART. 171.—*A case of Fibrous Tumour of the Uterus, treated by breaking up the interior.* By Mr. J. BAKER BROWN.

(*Lancet*, Dec. 14, 1859.)

The tumour here referred to is not a polypus, but one of those fibrous growths which are developed from, and partially included within, the thickness of the uterine walls—growths of which the treatment is notoriously difficult. It appears that a similar mode of treatment has been carried out by Dr. Atlee, of Philadelphia, and M. Recamier, of Paris, but Mr. Brown was not aware of this fact at the time when he operated.

CASE.—The patient was admitted into the "London Home" on the 8th February, 1859. Her age was 49. Her appearance indicated great and protracted suffering. The face sallow, the skin wrinkled, and the flesh wasted. She gave the following history of herself:

She had been ill for six years, the first symptoms being pain and swelling

in the lower parts of the abdomen, and a profuse menstrual discharge. The swelling gradually increased, accompanied by augmented pain in the pelvis, a frequent desire to pass water, and a great difficulty in defecation.

The obstruction to the relief of the bowels at length became so great, that she was obliged to resort, as a rule, to purgatives.

She was almost always in pain from the pressure of the tumour on the neighbouring viscera.

She had been under medical treatment a long time, and latterly under the able care of Mr. Teale, of Leeds, who candidly told her that he had no hopes of her being cured.

Examination.—By external pressure on the abdomen, I discovered a tumour extending from the pubis halfway up towards the umbilicus, and of the size of a five months' pregnancy.

On a vaginal examination, I found I could only pass the finger about an inch up, as it came into contact with the os uteri, which was slightly pustulous and very rigid. The cervix had been entirely obliterated by having been taken up in the enlargement of the body of the uterus. The whole cavity of the pelvis was felt to be occupied with the uterus, which was pressed back into the hollow of the sacrum, and on the other side squeezed the bladder under the arch of the pubis.

She was suffering much from dyspepsia and palpitation of the heart, and was altogether so much out of health that I at first hesitated to try any operative procedure. However, by careful attention to her diet, and the administration of appropriate medicine, she improved much in health, and earnestly desired to have the operation performed, the general character of which I explained to her. On the 21st of February, I accordingly operated in the presence of several surgeons, and with the assistance of my colleagues, in the following manner:

I placed her in the lithotomy position, and after gradually dilating the vagina, I introduced Bozeman's speculum, and brought into view, by means of two vulcellum forceps, the os uteri, which I then divided in three places by a straight-pointed bistoury, and thus brought well into sight the fibrous tumour, which I pierced in the centre, and then cut out from it a portion, much in the manner of coring an apple. Through the cavity thus formed, I broke down as much as possible the surrounding tissue of the tumour, and then concluded the operation by placing oiled lint in the incisions in the neck of the uterus, and by plugging the vagina with the same material.

So soon as the patient (after having been put to bed) had recovered from the effects of chloroform, I gave her two grains of opium, and subsequently for the next three or four days kept her slightly under its influence. On the third day the oiled lint was removed, and the vagina afterwards syringed night and morning with water containing a small quantity of chloride of lime. For the first few days there was considerable uneasiness and pain on pressure over the whole uterus, but these symptoms steadily subsided under the influence of opium, and by maintaining perfect quiet.

After fourteen days the nurse reported that she could pass the injection-tube two inches into the vagina instead of one inch only, as at first, and that the discharge was free and not offensive.

In another fourteen days the tube could be introduced still further, and a small quantity of water could be retained in the bowel when injected, whereas, before the operation, not an ounce could be kept up. An examination of the abdomen at the same time rendered it evident that there was a considerable decrease in the size of the tumour.

At the end of four months, during which a progressive improvement was

manifest, nothing more than a slightly enlarged uterus could be discovered on the most careful examination. The bowels acted freely, the urine passed without difficulty, and the general health was so much improved that the patient could take daily drives in a carriage, and at the end of July was able to leave London for her home in the country.

In the course of this month (November) she has written to me to say she is quite well, and can walk four or five miles without undue fatigue.

Remarks.—In all probability the tumour was in the instance just recorded gradually disintegrated and mostly carried off in the vaginal discharge, but the opinion may be hazarded whether the decrease was not also due in some measure to the operation of absorption carried on by the uterine veins, and first thrown into action by the serious interference with the processes of nutrition and growth belonging to it.

At the present time I have a lady under observation, in whom I recently performed the same operation as above described, and in whom the decrease of the mass seems to be pre-eminently the result of a sort of gradual solution or disintegration, followed as a consequence by a copious muco-purulent discharge.

Time and further experience can alone determine the utility of this procedure; should its success be proved, the benefits to a very large class of sufferers will indeed be great. To assist the solution of this question, I shall from time to time place before the profession the results of my experience.

ART. 172.—*Two Cases of Vesico-Vaginal Fistula cured by a new instrument.* By Dr. JOHN O. BRONSON, Professor of Surgery in the New York Preparatory School of Medicine.

(*American Medical Monthly*, Aug., 1860.)

The instrument employed in these two cases appears to have much to recommend it; it seems, indeed, to promise to supersede some of the means of which so much has been said, and by which so much good has been done of late. The cases will speak for themselves.

CASE I.—On the 6th of June, 1856, in conjunction with my colleague, Dr. C. A. Budd, I was called in consultation to a case of tedious labour. The labour, which had progressed favorably for a short period, was arrested at an early hour in the day, and at seven in the evening we met in consultation. The position of the fœtus was found to be regular, with the head low down. The vagina lacked moisture, and the external organs were greatly œdematous. It was decided to deliver at once by means of forceps, which was accomplished with care and skill by Dr. Budd. This was the fifth child of which she had been delivered, none of whom were then living, three of them having been stillborn and withdrawn by the forceps.

The case was left in the care of the attending physician, who, on the fifth day after, again called me on account of a dribbling of urine, of which the patient complained. I found the vesico-vaginal septum inflamed and sloughing where it had suffered compression between the occiput and pubis. I counselled cleanliness and attention to the general condition of the patient, she being of a delicate constitution, and requiring supporting treatment.

This course was followed, and at the termination of four months the patient was deemed in condition to bear an operation for the cure of the lesion resulting from the sloughing.

Upon thorough examination, the parts were found perfectly cicatrized.

The cervix uteri had been involved in the general inflammatory action, and had in great part sloughed away. To the left of the median line, and one inch from the cervix, a perforation of the vesico-vaginal septum existed, measuring one inch and a quarter in its vertical by three quarters of an inch in its transverse diameters. Its border was quite regular, and in a healthy state. The question of an operation was decided in the affirmative, and I resolved to perform it on the following principles:

Preparation of the border of the opening being the first thing requisite, I deemed a vertical incision as usually practised not as conducive to success as if the border was cut to a bevel, taking more tissue from the vaginal wall, thus producing a more extensive vivified surface, without really enlarging the opening. I considered other advantages to attend this manner of operating, as it involved a principle heretofore overlooked or unmentioned.

When the bladder is collapsed, the opposing surfaces, by every motion of the body or its larger members, are chafing the one against the other, and thus forcing the fluid it is constantly receiving into its cavity into any fissure or crevice, which in a state of rest would be wholly impervious.

A familiar illustration of my meaning is seen in a fine-meshed sieve, which will hold a considerable quantity of water if undisturbed, but if chafed even but slightly, by the palm of the hand for instance, the water is forced through rapidly and completely.

By bevelling the border of the aperture, when the sides are brought into apposition the vesical edge is in closer contact than the vaginal, and a slight prominence is formed on the vesical side, which counteracts, in part, the influence exerted by the collapse of the organ. Another fact having an important bearing on this operation I have failed to find heretofore considered. I mean the difference of structure between the vaginal and vesical tissues. The strong muscular structure of the bladder greatly preponderates over the weak muscular tissue of the vagina. There is a difference not only in power, but also in function. The muscularity of the vagina is only active under sexual excitement; whereas, the muscular action of the vesica is stimulated by the presence of anything in its cavity. This difference presents an indication which is met in great part by this method of denudation.

Coaptation and maintenance of the lips of the wound in contact, with the exact amount of pressure, was the next subject for consideration.

Rest is a fundamental law of cure, and the more completely it is effected the more successful will be the result after operations upon the vesico-vaginal septum. To overcome direct opposing traction upon the lips of the wound is not all that is sufficient. A sliding of the lips upon one another must be also prevented.

To meet these indications, I devised an instrument which combined the power of preserving perfect rest to the parts implicated, in overcoming both direct and oblique traction, and the advantage of being readily graduated in its pressure, external to the vulva.

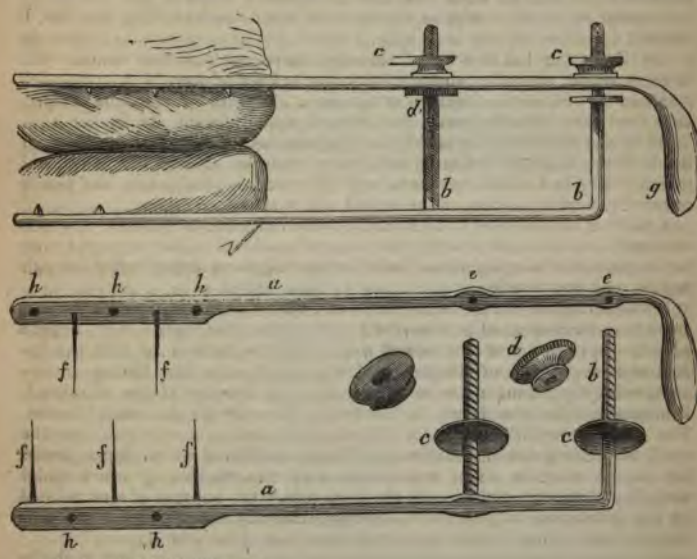
Having well considered these matters, I proceeded to carry them into practice.

On the 30th of October, 1856, in the presence of Dr. B. Fordyce Barker, Dr. C. A. Budd, and assisted by Dr. J. H. Douglas, and Mr. Farrington, medical student, I operated on the foregoing principles.

Placing the patient on her knees, with her body flexed forward, and resting upon her shoulders, in the position first recommended and practised by Wützer, the parts were brought into view by means of the swan-bill speculum or perineal elevator, as also first practised by him.

First de[illegible] with a sharp-pointed bistoury the extent to which denu-

dation was desired, I proceeded to dissect a continuous strip from the vaginal border of the opening, three eighths of an inch wide, leaving the vesical tissue barely encroached upon at its extreme edge. This step was readily perfected with bistoury and scissors. All was now ready for the application of the instrument (see cut), which was done by inserting the teeth one half an inch from the edge of the denuded surface, and passing them between the



a, *a*, Arms of the instrument.

b, *b*, Pillars threaded to carry the nuts.

c, *c*, and *d*, *d*, Which serve to confine the arms in their proper relation, and graduate the pressure.

f, *f*, *f*, *f*, *f*, Teeth, acting the parts of sutures. Opposite each is a hole, marked *h*, to receive the points of the teeth, in case it is necessary to bring the arms nearer to each other than the teeth would otherwise allow.

O, Flange, or process by which the arm to which it is attached can more readil be handled. The pillars, *b*, *b*, serving the same purpose in the application of the opposite arm.

The instrument is made of steel, and may be electroplated or not, as may be deemed desirable. By use it becomes protoxydized, in which state it remains without further corrosion.

vaginal and vesical membranes, and bringing them out at points in the denuded surface one eighth of an inch from the vesical border. The two parts of the instrument were then approximated, and the lips of the wound brought into close contact, and there retained by means of the thumb-screws, perfectly closing the aperture. A catheter was then introduced and secured in place, and the patient, assuming the recumbent position, was left to rest and await the action of nature.

On the following day, everything was progressing favorably.

On the 1st of November, the second day after the operation, by a misunderstanding on the part of the attendant, the patient was not visited, and on the following day I found that the catheter had been accidentally removed, and the bladder was filled to its apparent limit, and yet the parts were impervious. I drew off seventeen ounces of urine, giving the patient great ease.

November 4th, five days after the operation, I removed the instrument, and found my fondest hopes realised by complete union of the lips of the wound.

On December 3d, she was discharged cured, with perfect control over urinary action, and able to retain her water as long as ever.

CASE 2.—Mrs. G—, native of Ireland, 32 years of age, was received into the New York Infirmary for Women and Children, September 12th, 1859, giving the following history:—She was the mother of three children, all of whom had been delivered with instruments, on account of a contracted pelvis. The last child was born still, in October, 1857, when she was in severe labour forty hours, at the end of which time her attending physician called Dr. A. K. Gardner in consultation, who immediately delivered her with forceps.

On the seventh or eighth day after, urine began to dribble through the vagina, and had continued ever since. Upon examination, a perforation of the vesico-vaginal septum was found to exist about a quarter of an inch from the cervico-vaginal junction, of a size admitting the passage of a uterine sound. Operation was determined upon. On the 14th of September, after thorough evacuation of the bowels, I proceeded as in the aforementioned case, with my patient in the same position. On account of the distance of the opening from the vulva, the successive steps of the operation were attended with some difficulty.

In performing the denudation, the tissue was found to be dense, and of too little vitality to augur well for success; nevertheless, it was finished, and the instrument applied as in the first case. On account of the relation of the parts, however, the instrument was slightly curved, thus allowing of a better adaptation. As in the former case, a catheter was secured in place, a suppository of opium introduced into the rectum, and the patient left to rest.

Dr. George T. Elliot, Dr. E. Blackwell, Dr. Hughes, Dr. Underwood, Dr. Stratton, and Dr. Cushing witnessed and assisted in the operation.

On the 19th the instrument was removed in the presence of Dr. John Howe and Dr. Hughes, and union was found to be imperfect, although no communication existed between the bladder and vagina.

20th.—A small spot of moisture upon the sheet, yet upon examination no point was ascertainable through which water could have flowed. Nitrate of silver applied to the uncicatrized part, and a catheter passed, to be retained.

21st.—Catheter withdrawn.

25th.—No abnormal opening into the bladder. The vitality of the parts before mentioned evident in the cicatrization. Nitrate of silver has been occasionally applied, with good effect.

October 30th.—Retains her urine perfectly, and has done so since the 20th, holding it for two hours.

November 2d.—Bed again wet. No aperture, however, existed, and another cause had to be assigned. It was believed to be inability of the bladder to retain beyond a certain quantity of urine, and that it passed by the urethra.

This solution of the question was supported by the fact, that it never passed during the day, and only those two times at night. Commenced to menstruate.

9th.—Perfect control over urinary action; cicatrization complete; discharged cured.

Art. 173.—*Clinical Reports on some diseases of the Rectum, &c., in Women.* By Mr. J. Baker Brown.

(*Lancet*, July 14, 1860.)

The diseases referred to in this paper produce more or less pain in the uterus, and are frequently overlooked because the uterus itself is supposed to be the source of suffering. The practical conclusion arising from them is that the surgeon should always examine both uterus and rectum.

Case 1.—L. P—, æt. 25, single, admitted into the London Surgical Home, December 22d, 1858. She complained that she had suffered for a long time from heat and pain in the womb, with pains in the back, and a general feeling of uneasiness in her bowels. She looked ill and worn, and was suffering much from dyspepsia. She had been treated by leeches to the uterus, for dyspepsia, and for the uneasiness in her bowels, but without deriving the least benefit. On examining the uterus, no disease could be found; menstruation was regular; there was slight leucorrhœa. On inquiry if she had more pain at the time of, or after, an action of the bowels, she replied, "Yes, always; that then she had a sharp shooting pain darting through the womb, and that she was obliged to lie down because the pain and uneasiness were so great in her bowels; in fact, that she dreaded going to the watercloset." On passing my finger into the rectum she complained of acute pain, and I found a deep fissure just within the sphincter, and opposite to it a small pendulous polypoid body, the pea-like end of which dropped into the fissure.

Treatment.—A dose of castor oil was ordered early in the morning on the following day, and after it had acted freely the rectum was well washed out with warm-water enemas; the fissure was then divided by Copeland's blunt-pointed straight bistoury, the polypus tied, and the rectum plugged with lint soaked in sweet oil. Two grains of opium were given, and generous diet ordered.

December 25th.—The bowels were opened by a castor-oil enema; afterwards the nurse applied sweet oil on her finger to the whole cut surface, and repeated it once daily.

January 6th, 1859.—Discharged quite cured. I have heard of her since as continuing perfectly well.

Practical remarks.—This case well illustrates the proposition which I have just advanced. I would also wish to observe that a very large number of fissures of the rectum are produced by these little polypoid bodies, as they will be found in almost every case if carefully sought for. It will be observed that the dressing of lint and oil was never repeated. This has been my invariable practice for the last twenty-five years, having been taught the great practical fact by my esteemed friend, the late Dr. Copeland, that it is never necessary to interfere with the parts by the painful process of reintroducing the lint, if care be taken that the first dressing be left in for forty-eight hours; after that time there is no fear of union by first intention, but,

on the contrary, a healthy granulating process is set up, which continues till the end.

Case 2.—Emma C—, æt. 42, married, mother of eight children, admitted into the London Surgical Home on the 11th of June, 1859. She complained of having suffered for a long time from pain and bearing-down of the womb, and also from piles since her first pregnancy, twenty-two years ago. Finding that there was no disease of the womb to account for her suffering, I inquired if she suffered much pain on defecation, and she replied, "Yes; that when her bowels acted she had great pain; and that as they were generally in a torpid state, she was constantly obliged to take aperients." On examination of the rectum, some old external piles were found, covered by skin, and within the sphincter some internal piles; at the root of one of them a deep fissure was felt, and opposite to it a large polypoid body.

June 16th.—External piles cut off, internal piles tied, fissure divided, and polypoid body twisted off at its root. The after-treatment the same as before.

July 16th.—Discharged cured.

Case 3.—E. F—, æt. 30, married, mother of two children, admitted into the London Surgical Home on the 8th of December, 1859. She has been suffering for the last four years from pain in the womb, sensations of bearing-down, pain in the back, general lassitude, and inability to perform her domestic duties. She had been in an hospital for a month, and was dismissed because she was supposed to have no disease—in fact, that she was shamming illness. On examination, the uterus was found healthy; but on examining the rectum, the same condition was found as in Case No. 1.

Assisted by my colleague, Dr. Hall Davis, I divided the fissure, &c. In a fortnight she was out walking, in a month she left the hospital, and I have since heard of her as being in perfect health, and performing actively her domestic duties.

Case 4.—M. R—, æt. 35, married, was admitted into the London Surgical Home on March 14th last. For several years she had suffered intense pain about the uterus and rectum; and for the last three years has had caustic applied to the uterus twice a week, but without the slightest alleviation of her painful sufferings. She had been in the habit of taking three or four grains of opium a day, and her general health seemed completely broken down. On examination, an old fissure of the rectum was easily found, situated behind two large piles.

March 22d, 1860.—The fissure divided, and the piles removed.

24th.—The bowels relieved with less pain than she had had for many years past.

April 4th.—Discharged, quite cured.

Remarks.—It will be observed, that when the bowels were relieved, only two days after the operation, she had a marked cessation of pain. This is invariably the case, and is a most cheering fact to both the surgeon and the patient.

Case 5.—H. A—, æt. 43, single, a lady from the country, had been suffering for some years from supposed uterine affection, and had had leeches and caustic applied to the uterus, but still derived no benefit. On examining per vaginam, I could find no disease or anything that required treatment. Menstruation was regular. On inquiring if she felt any pain on defecation, she replied, "Yes, frequently; sometimes acutely." On passing my finger within the sphincter, I found a painful fissure, opposite to it a small polypoid body, and two internal hæmorrhoids. I advised that she should stay in town; and, after two [illegible] aperient doses, that she should undergo the usual

operation. This was done, and in ten days she was up, feeling quite well, and in a fortnight left town without an ache or pain in uterus or rectum. Two years have elapsed since, and she has continued perfectly well. She has frequently expressed her surprise that she had never been so thoroughly examined before when seeking medical advice.

Case 6.—P. C—, a lady from the country, married, without children, had been for many years suffering from what she considered uterine disease, accompanied by painful menstruation, which was supposed to arise from constriction of the os and cervix uteri. Leeches, sponge-tents, and uterine dilators were from time to time persevered in. Still she kept getting thinner and weaker; and from having been accustomed to ride on horseback, and to take much out-of-door exercise, she was unable to do either, constantly reclining on her sofa, and being, in fact, a confirmed invalid. On inquiring if she suffered pain on defecation, she replied, "Yes, so much so, that she always dreaded any action of the bowels, and was obliged to take strong aperients; that then the pain extended a long way up the bowels, and left a long, wearying, aching pain, which always made her feel sick and faint for some hours afterwards." On examination, I found the same condition of rectum as in the last case; but the fissure was deep, and evidently of long standing, and the sphincter itself was so firmly constricted as to admit with difficulty the point of my finger. I confidently promised a speedy cure if she submitted to the necessary operation. This she did on the 2d ultimo, and on the 4th, her bowels were relieved by castor oil enema, and an enormous quantity of feculent matter removed. On the third day the bowels were also moved after a small dose of castor oil. The patient then, to her intense delight, found that she had none of her old painful suffering. Since then she has steadily and gradually progressed in health and strength. Her face, which had been thick and muddy, is now clear and bright, indicating all the signs of returning health. I could easily increase the number of these cases from my note-book.

Art. 174.—*Sudden death from bursting of an Ovarian Abscess.* By Dr. Faye.

(*Norsk Mag.*, 1859; and *Schmidt's Jahrb.*, No. 5, 1860.)

Case.—The patient in this case was a feeble woman, twenty-nine years of age, who had just been delivered by the forceps, under chloroform, of a living child. During pregnancy (it was her first child) she suffered much from vomiting; and towards the end of her period, she had a fixed pain in the right side of the abdomen, and several convulsive fits. On the night after delivery, she had severe pains, which were mistaken by the midwife for after-pains. On the day following, these pains had more of a bearing-down character, and the abdomen was tender and tympanitic. Death happened fifty-three hours after delivery; and, on examination, the Douglasian space was found filled with a thin, purulent, sanguineous exudation. It was found, indeed, that an abscess in the right ovary had burst, that the remainder of the organ was changed into a mere pulpy detritus, and that the left ovary was hypertrophied and œdematous. Besides this, there was considerable degeneration in the cortical substance of the kidneys, and many small extravasations of blood under the serous membrane covering the kidney, liver, and lung.

Art. 175.—*A Case of Osteomalacia.* By Dr. Breslau.

(*Deutsche Klinik*, Sept. 30, 1859; and *New York Journal of Med.*, May, 1860.)

The following is a new case illustrative of this interesting and rare anomaly.

Case.—Mrs. V—, Pf. of Baretschioyl, near Zurich, forty-two years of age, entered the Lying-in Hospital in November, 1858; born in 1816 of a healthy mother, she had enjoyed perfect health during her infancy, and she never suffered from scrofulosis or rhachitis. At the age of twenty-one she was married; during the first three years in succession, she had a miscarriage in her third month of pregnancy. The patient living in very restricted circumstances, she was obliged to resume her usual hard work two days after each of the above-mentioned accidents. In the four subsequent years, she gave birth to two full-grown children. Five years ago she had her fifth child, which was delivered by turning, on account of a cross presentation. With the exception of a slight weakness of her general system, she had enjoyed pretty good health up to about a year since, at which time she again miscarried, and had a severe hæmorrhage which lasted four days. After this time she began rapidly to fail in strength, to which was superadded a dull pain along the spinal column, in consequence of which she was compelled to stay in bed for the greater part of the day. Nevertheless, the patient became pregnant again after she had her last courses on the 11th of April, 1858. Her condition, as it presented itself on the 6th of November, was the following:—The first impression she presented was that of a woman who had been suffering for a long time. The spinal column was inclined toward the right side in its dorsal portion as much as 1½", and in the lumbar region there was a compensatory deviation to the left; arms and legs were straight, well formed, but very thin; pulse quick, seldom below 100; skin hot, at times covered with a clammy sweat. The specific gravity of her urine was 1005, free from albumen and sediment, of an acid reaction; amount of phosphates not increased. Her slightest movements, even when in perfect rest, were attended with pain; all parts of the skeleton, with the exception of the skull, legs, or forearms, gave pain on being touched, but more remarkably so the bones of the thorax, the trochanters, the iliac bones, and the symphysis pubis. The pelvis, on being examined, offered unmistakeable signs of osteomalacia, well characterised by the beak-like configuration of the symphysis, and by so close a proximity of the pubic bones that it was almost impossible to pass the finger for examination. This obstacle was, however, conquered soon afterward by the introduction of a second finger, the joint pressure of which easily moved the pubic bones asunder, which latter seemed to be of a very soft and pliant substance, affording sufficient space for examination. The pubic arch remained in this artificial dilatation about twenty-four hours, but after that time it gradually returned to its former condition. The promontorium protruded considerably into the cavity of the pelvis, the excavation of the os sacrum very striking, its lower portion, as well as the os coccygis, in an almost horizontal direction; the edges of the iliac bones curved inwardly. The diameters of the pelvis appeared to be as follows: 1. Diagonal conjugate diameter, 3 par. 2. Conjugate of the brim with symphysis and soft parts, 3 5'''. 3. Conjugate of the brim without soft parts and symphysis, 2 5'''. 4. From the apex of the os coccygis to the lower margin of the symphysis, 2 5'''. Distance of tubera ischii, 2". These measures were taken by Van Huevel's pelvimeter with the assistance of the forefinger.

This was, therefore, a specimen of a pelvis softened and contracted to the utmost degree by osteomalacia, which from its configuration would present the greatest obstacle to the passage of the child; and this was the more to be apprehended, because it was impossible to decide whether the pelvic entrance would be dilatable at the time of delivery or not. Dr. Breslau decided, therefore, to induce premature labour at the end of the twenty-ninth week; the chances of a safe delivery for both mother and child, inclining more toward an evil than a good result. This, however, was anticipated by nature itself. On the 12th of November, the patient was seized with a violent attack of fever, followed immediately by strong labour pains, which, up to 6 o'clock p.m., of the following day, had developed the uterine os to its full extent. At 7 o'clock p.m. the membranes burst open, and now the buttocks were found the presenting part of the fœtus. The left hip came down first, and in two hours and a half a dead child was born weighing two and a half pounds; altogether the child was not sufficiently large and solid to have needed any considerable amount of dilatation of the pelvic cavity during its passage; nor was this occurrence observable during its delivery.

On the 22d of November the pelvis was again examined, and it was readily ascertained that the bones had lost nothing of their pliability. From the time of her confinement, the patient began to suffer considerably, not only from her old complaints, viz., the great pain in her bones, but equally so from a very distressing cough, attended by a profuse discharge from the lungs, and a very low feverish state of her general system; still, with the use of strong doses of cod-liver oil, Seltzer water, and some medicine to promote expectoration, she had so far recovered from all her different complaints, that, on the 10th of January, the pain in the bones had entirely ceased, the cough was considerably reduced, and she had gained in strength.

Upon internal examination, however, the arcus pubis presented so much convexity and contraction, that only the first phalanx of the forefinger could be passed; the pliability of the pubic arch existed no longer. The weight of the patient was only fifty-nine pounds. The facts resulting from the foregoing case, are as follows:

1. The softening of the bones of the pelvis and the greatest part of the thorax, took its origin in an abortion. It is probable that in connection with the existing predisposition, her damp lodgings, as well as the unhealthy food, and the numerous labours and abortions, had influenced in some measure the development of her disease.

2. The bilateral compression of the pelvis was in this instance, as in most others, the consequence of a pressure upon both trochanters, caused by continued lying on one or the other side. From her occasional attitude in a half-sitting position, the lower and posterior portion of the sacrum was flattened, and the os coccygis approached the pubic arch.

3. The modification of the bones assumed its greatest intensity eight or fourteen days after delivery. Pain and tardiness of motion kept pace with the progress and decline of the corruption of the bones.

4. The softness and pliability of the bones disappeared by degrees, the formerly mollified bones regained their natural hardness; and it may be therefore concluded, that,

5. A perfect disappearance of the osteomalacia cerea had taken place in this instance, promoted as it was, to a great extent, by the large and long-continued doses of cod-liver oil.

6. As far as the author was able to judge of it, there existed no tendency to frangibility of the bones, but it is not unlikely that, with the progress of atrophy of the bones, the former pliability might be substituted by a brittleness and frangibility of the same.

7. To the obstetrician it is of the greatest importance to know exactly in

what manner he has to act, when he meets a case of decided osteomalacia pelvis. Dr. Breslau is of opinion that we should *not* place too much confidence in its dilatability. If it is detected in the early stages of pregnancy, the only safe way is to proceed to induction of premature labour or abortion. But if we have to treat a case of this kind at the beginning of labour, we should not decide at once upon Cæsarian section, but rather wait and see whether or not the pliability of the pelvic bones will permit the child to pass. In the latter instance, the head of the child will often serve as a cone, very apt to distend the softened bones. On the other hand, it must be called to mind that a Cæsarian section, when performed seasonably, is surrounded with less danger for both mother and child, than when it is performed in extracting a child whose head or nates have been allowed by too great inactivity of the accoucheur to become tightly wedged in the pelvis.

(C) CONCERNING DISEASES OF CHILDREN.

ART. 176.—*On the Hygienic management of Infants and Children.* By Dr. T. HERBERT BARKER.

(8vo, London, Churchill, pp. 120, 1860.)

This work appears to be well calculated to remove a good deal of the ignorance which prevails respecting the hygienic management of infants and children. It may be read with advantage by young medical men, and, not less certainly, it is calculated to interest and instruct the public at large. Diet, clothing, temperature, air, sleep, bathing and washing, light, exercise and amusement, the nursery and nurse-maid, the management of dentition, the rules of a sound education, are all treated of, and under each head will be found no stinted supply of valuable information.

ART. 177.—*Infant Feeding and its influence on life, or the causes and prevention of Infant Mortality.* By Dr. C. H. F. ROUTH, Physician to the Samaritan Free Hospital, &c.

(12mo, London, Churchill, pp. 379, 1860.)

For some years, as our pages show, Dr. Routh has paid considerable attention to the influence of injudicious feeding upon infantile diseases and mortality. He has written well upon the several branches of the subject, which have engaged his attention, and it is to be expected, therefore, that the present work, which professes to contain his matured, developed, and connected views, will be, what it in reality is, a book with many claims upon our attention. There is, no doubt, much ignorance upon the subject of infant-feeding, not only among the public at large, but among medical men themselves, and he does good service who helps in any measure to awaken attention and supply true knowledge.

ART. 178.—*A new and rational explanation of the Diseases peculiar to Infants and Mothers, with obvious suggestions for their prevention and cure.* By Mr. THOMAS BALLARD.

(Post 8vo, London, Churchill, pp. 128, 1860.)

Mr. Ballard holds, as we have shown in a former volume (XXIX, p. 176), "that the instinctive art of sucking under circumstances unfavourable to the infant obtaining the food for which its system craves, is a fruitful source of disease to infants, and puerperal women;" and it is an amplification of what he has already written on the subject, together

with a chapter on light as the only cause of the purulent ophthalmia of infants, which form the subject of the present volume. An outline of the arguments by which Mr. Ballard endeavours to support the first proposition will be found in the article to which reference has just been made; for the rest we must refer to the book itself, merely adding that the reference will result in not a little information of a practical character.

ART. 179.—*On Sudden Death in Infancy and Childhood.*
By Dr. CHARLES WEST, Physician to the Hospital for Sick Children.
(*Medical Times and Gazette*, Nov. 26, 1859.)

Dr. West's object in this clinical lecture is to show that, in the great majority of instances, when death suddenly befals the infant or young child, it is an accident, and not a necessary result of any disease from which it is suffering; and that small things—food, warmth, posture, quiet, go far towards warding off this accident. The case which serves as a text is this:—"A little boy, eight months old, had cut two teeth at six and a half months, had always seemed well, save that, now and then, his hands were a little clenched, and his thumbs drawn into the palm. His bowels were slightly constipated; a small dose of castor-oil was given him. He swallowed it readily, but had scarcely done so when he stretched out his tongue, his face turned livid, but was scarcely at all distorted; he did not struggle, he uttered no cry—scarcely a sound passed from him, and he was dead!—dead with no trace of disease; from mere momentary spasm, which, for a few seconds, stopped his breath; which, had it ceased sooner, would have left no cloud upon his face, nor quelled for a quarter of an hour his cheerfulness."

"I have related this case," says Dr. West, "not merely because it serves as a specimen of the way in which, in early infancy, life is not infrequently cut short without any trace of local mischief being discoverable; but because it illustrates the fact that it is by sudden interference with the respiratory process that such death is oftenest produced. The suddenly fatal apoplectic seizures which we observe in the adult, scarcely ever occur in early life, nor do we often meet, except in instances of congenital malformation, with sudden death dependent on disease of the heart. But in the course of all affections which seriously interfere with the process of respiration sudden death is a contingency for which we should always be prepared, and this especially in proportion as the disturbance of breathing partakes of a spasmodic character.

"Now, of all the forms of spasmodic disorder of respiration, that to which the name of spasmodic croup, or laryngismus stridulus, has been given, is by far the most frequent; and to it, probably, three out of four of the sudden deaths of children, under one year old, are due. It is not that this ailment is generally fatal; for in proportion to the frequency of its occurrence, the mortality which arises from it is small; but it is that the fatal event is apt to be very sudden, which accounts for the anxiety wherewith its symptoms are watched by those who understand their import.

"In early life, as you are aware, the excitability of the nervous system is far greater than in later years; and slight causes make a deeper impression, and produce a more profound disturbance, while the control-

ing power of the child is studied still more becomes in after-life. In infancy the sources of irritation are extremely numerous:—the irritation of the stomach during the whole period of teething; the irritation of the bowels whenever a full charge of food is taken into the stomach; the sudden nervous disorder or convulsion to which the delicate nervous system is liable; the irritation of the brain, whose disturbance, when once excited, is apt to spread to the brain as a whole, and the pain in the head which attends breathing in the thinly-clothed lungs, and the vascular tissue which the convulsions will often inflame, and which will, without much trouble, fill the air-cells—all for a moment—to produce not only a fatal, but the most sudden death. For days—for weeks, perhaps—does the child appear to suffer pain, and if a new insult or injury be added, it is because they are often accompanied by but little disturbance. Nor should you be surprised at this, because they are seldom dependent on disease. The child is remarkable for readiness of recovery—because they are not at all aware that the safety of parents is hardly ever injured by pain, and the watchfulness even of the doctor is apt to fall asleep. Do not, however, because the symptoms of the cancers they betoken are slight, be induced to neglect the consideration of a single one of those particulars which may soon subject you to the charge of unnecessary alarm. Because sudden noises, which startle—a flash of light, which dazzles the sight, though only for a moment—a dark cloud arising from sleep—or even an over-hasty or an over-full meal, which interferes with the descent of the diaphragm—any cause, in short, that deranges the regular rhythm of the respiratory movements, may give rise to spasm, and this spasm may prove suddenly fatal.

"In the out-patients' room of this hospital you will see many such cases. It is of the greatest importance to learn to notice and to interpret signs that would readily escape the eye of the unobservant, although they are the indications of a state of system in which, while the prospect of well-doing may be encouraging, yet the chances of sudden death are never to be lost sight of.

"In cases of this description, too, when one convulsion have occurred, a few moments' soon comes into play, which aggravates the danger and increases the frequency of the attack. The blood imperfectly depurated, if the disturbance of respiration has been considerable, seems to tend to exercise an injurious influence, by increasing the irritability of the nervous system, and thus promoting the return of the attack. If one convulsion have occurred, the probability of their recurrence is much increased, and the oftener they have happened, the more often are they likely to return, and the graver is the prognosis which you are authorized to form. This rule holds good, too, not with reference merely to spasmodic croup, but with reference to all spasmodic affections of the respiratory organs, and hooping-cough affords one of its best exemplifications. In some of its coughing more violent than any of the others, the spasm of the larynx is of longer continuance, the face grows livid, a fruitless respiratory effort is made, and before the spasm ceases a convulsion takes place. This convulsion is but very seldom a solitary one. The power that the lungs is succeeded by very accelerated breathing, by which, however, the blood is very imperfectly depurated, as you see by the eye, which never resume their natural colour. At length the disturbance once more reaches its climax, and another,

and then another convulsion occurs, with a gradually-diminishing interval, until death takes place. If, in such circumstances, you watch a child, you will notice how carefully it avoids every movement—how it remains in the same posture, occupied, apparently, altogether with the business of carrying on its respiration as gently and quietly as possible. Change its posture rapidly, excite it by sudden entrance into the room, disturb it by a violent emetic—interfere, in short, in any way with the regular steady performance of its respiratory movements—and convulsions will come on, and in these convulsions death is likely to take place.

"Some years ago I learnt this lesson in the case of a little boy, six years old, in whom hooping-cough set in with great oppression of the respiration, though that was out of proportion to the signs of local mischief detected on auscultation. I treated him with greater activity than I should now do, and gave him tartar-emetic, which failed, however, to reduce the frequency of his respiration, or to improve his condition. Still his state was one suggestive rather of anxiety for the future than of present danger. He was breathing carefully, anxiously, as though respiration were a function which required all his attention for its performance. Wishing to auscultate him, I had him lifted out of bed on to his mother's knee; but scarcely had he assumed the upright posture when a fit came on, in which he struggled much, his face became livid, almost purple; and though in less than three minutes the convulsion was over, it left him ashy pale, with a very feeble pulse, and perspiration streaming from every pore. He lived for thirty-six hours longer, but his respiration never resumed its natural frequency; a second fit occurred, six hours after the first; and then a third, which rendered his pulse still feebler. He lay now on his back, uttering a piteous moan, his face livid and miserable, his eyes dim, and though his pupils acted naturally, he yet complained that he 'wanted more light.' A fourth fit lasted several hours, and left him insensible; with the death-sweats on his face, and his eyes distorted, then came a fifth, which lasted for but a few minutes, when he died tranquilly.

"There were here no morbid appearances in the brain, the lungs were extensively congested, and their lower lobes were in the first stage of pneumonia. The blood was imperfectly aërated; but, even so, while no demand was made for more adequate performance of the respiratory function, dangerous symptoms did not appear. The child's posture was suddenly altered, his circulation quickened, attempts at more frequent respiration in order to keep pace with the increased necessities of the system did but issue in an attack of spasm, and another, and still another, returned causelessly, till at length what we can scarcely call other than a *needless* death occurred.

"There would be no difficulty, if time allowed, in multiplying illustrations; but it is scarcely necessary to do so, and we may sum up the chief conclusions, to which thus far we have been conducted, as follows:

"1. That sudden death in infancy and early childhood is most frequently dependent on spasmodic disturbance of the respiratory process. 2. That the occurrence of a single convulsion from such spasm renders it in the highest degree probable that others will follow it; and consequently implies a far greater risk of sudden death than exists so long as no such convulsion has taken place. 3. That when any spasmodic disorder of respiration is present, it is impossible to be too careful in avoid-

ing any sudden impression on the nervous system, any sudden change o temperature, any hasty alteration of posture; in short, any cause what ever by which the respiratory process may be disturbed.

"The next fact, to which I desire to call your attention, is the occa sional occurrence of sudden death wholly independent of spasm, but i consequence of the sudden attack or extensive invasion of the respira tory organs by disease.

"One of the simplest illustrations of this occurrence is met with i those instances in which the lung has been but imperfectly expanded a birth; the child in such circumstances lingering with lessening power and increasing weakness, till life comes to an end after the lapse of a few hours, or days, or weeks. Such death is very often sudden, and not infre quently preceded by convulsion; and this, although nothing in the infant' condition a few hours previously had indicated that it was less well, o that anything had diminished its chances of surviving its early difficulties

"Something of the same kind you may occasionally observe when—in the course of an attack of bronchitis or pneumonia—a large extent o lung has suddenly become collapsed, and the amount of breathing surface has thus been lessened considerably, and all at once. Such an acciden is likely to happen in proportion to the tender age of the child, and its possibility is always to be borne in mind as governing your prognosis and as suggesting an explanation of the otherwise inexplicable death of a patient.

"It seems, contrary to what were most probably your preconceived im pressions, that sudden death in early life is most commonly due to some disturbance, direct or indirect, of the respiratory function; that either sudden spasm arrests it, or, disease having interfered with its perfect ac complishment, some sudden demand for its complete exercise issues in the sudden standstill of the whole machinery. Neither, indeed, does disease of the brain itself stand next in importance among the causes o sudden death; but after these cases in which death may be said, in technical language, to take place from apnœa, come those in which it depends on asthenia; in which life goes out for want of nervous power to keep the vital functions in activity.

"It is in this manner that sudden death is apt to occur in diarrhœa it is thus, too, that it sometime takes place in early infancy when over active treatment has been adopted for the cure of pneumonia or bron chitis: or when, independent even of over treatment, the attention ha been so engrossed by the *disease* that due care has not been taken to provide for the nourishment of the patient. This class of sudden death though by no means rare, may be said to be almost needless, inasmuch as its occurrence, may, by due foresight, be almost always guarded against The accident is perhaps more likely to happen and more difficult to pre vent in the course of diarrhœa than of most other disorders, since the infant is exhausted not merely by the abundant discharges, but also in many instances by the severe pain which accompanies them. The danger too, is great in proportion to the tender age of the infant; and it is in relapses of diarrhœa that the hazard is most considerable, and the warnings which forebode it are the slightest. A return of the disorder of the bowels which for some hours, or for one or two days, had seemed di minishing, has reanimated the apprehension of relatives: when, once again there comes a diminution of the previous apparent distress, a lessening

of the restlessness, a quieting of the previous plaintive moan; and though the diarrhœa is not much diminished, yet at any rate the disorder of the bowels is not growing worse, and probably has at no time been so considerable as at its first onset. The apparent good is hailed with joy; the fact that this change may after all import evil, not good, is lost sight of; the little things which show their real meaning are not noticed, probably not observed, for they are nothing more than a slight dilatation of the pupils—so slight that in the darkened chamber it is not noticed; an apathy to external objects and sounds, which seems perhaps to be only the good result of the hushed stillness maintained around the darling's cot; a loss of the power of generating heat, which the tender officiousness of the mother renders almost imperceptible. Such, however, are often the only precursors—the harbingers, if you understood their mission—of the sudden collapse which, in an hour or two, is followed by a death as quiet often as a falling asleep.

"Even these premonitions are not always seen, but when young infants are already much exhausted, the disturbance of the nervous system, slight though we may fancy it, which accompanies the action of the bowels, may suffice to upset the whole balance of the functions. A slight convulsion, a sudden dilatation of the pupils, a momentary sigh, and all is still in death.

"Should I do nothing more, I shall be well content to-day, if I can impress upon you how little things are to be noticed, little precautions to be observed, little dangers to be avoided in the diseases of infancy and childhood.

"Though it is in the course of diarrhœa that the danger of sudden death from exhaustion is most to be watched against, yet your own experience will suggest to you many other circumstances in which you are likely to encounter it. You will meet with it in cases of pulmonary inflammation; the disorder of the respiratory function of itself disturbing the nervous system, and predisposing to the same occurrence which your active treatment (necessary, perhaps, at first, though now too long continued) tends in another way to produce.

"I remember being called to see an infant three months old, who had had a slight attack of bronchitis complicating measles, for which it had been treated very judiciously by its medical attendant. The mischief in the chest was clearing up, the child was much better; anxiety was almost over; when suddenly the inspirations became again hurried, the pulse extremely rapid, the child took no notice, it seemed dying. The explanation of these symptoms, however, was not far to seek; the infant was at the breast, but its mother herself was ill, her secretion of milk scanty; her babe had but little power to suck, and got but little even of the small amount of nourishment which there was for her; in a few hours more her death all but suddenly would have taken place. A few drops of brandy revived her, a meal of ass's milk renewed her strength, and in a few hours the transition from imminent peril to perfect safety was complete.

"One word more of caution applicable to the management of convalescence from all exhausting diseases in early life. Too great care cannot be taken that no needless exertion is made, no sudden change of posture permitted, no protracted withdrawal of nourishment allowed even during the hours of sleep. Some years since, I watched a little boy through severe remittent fever; the grave symptoms were at an end, and though

the child was extremely weak, convalescence was fairly established. He had restless nights, however, on which account a small dose of Dover's powder was given him towards evening. He slept the better for it, though still waking up, and taking food during the night. On the third night the same dose was again given him; he slept so well that his nurse did not like to disturb him; she lay down beside him and slept too, when morning came he was dead, he had passed away quietly in his sleep. I have never since forgotten the danger, nor omitted to caution the attendants of a child, that they must still be watchful, even when recovery seems most certain.

"And now I have enumerated a great variety of circumstances in which sudden death may take place, but yet have not spoken of disease of the nervous centres themselves as tending to its production. I did so advisedly; for in spite of the extreme susceptibility of those organs to disturbance from causes almost numberless, yet it scarcely ever happens that structural changes are discovered in them sufficient to account for sudden death; though, as I scarcely need remind you, actual organic disease of the brain is even more frequent in the child than in the adult."

ART. 180.—*On the etiological and prognosic importance of the Premature Closure of the Fontanels and Sutures of the Infantile Cranium.* By Dr. A. JACOBI.

(*Contributions to Midwifery*, 8vo, New York, Bailliere, 1860.)

The evidence adduced in this very elaborate and able Essay, tends to show that children whose fontanels and sutures are prematurely ossified, hold their life upon a very uncertain tenure, inasmuch as the closed cranium prevents those changes of volume in the brain which are of frequent occurrence in infants, and to allow of which appears to be the great reason for the cranium remaining unclosed so long as it does. Prevented from growing by a closed cranium, the brain may become hardened, and idiotcy or epilepsy may be the result. Prevented from expanding, as it must expand under the vascular congestion accompanying any acute or febrile disease of infancy, the brain may become compressed, and the danger thus arising, superadded to those of the primary disease. Dr. Jacobi, indeed, is disposed to look upon premature closure of the fontanels and sutures as a fatal fact if the infant exhibits any head symptoms; and he considers himself justified in drawing the conclusion, "that henceforth many cases of infantile diseases which terminate unexpectedly and unfavorably, will be at least explicable to the medical mind, and further that, to give more exactness to diagnosis, and more certainty to prognosis, the condition of the cranial fontanels and junctures in general will be deemed worthy of the closest attention and examination."

ART. 181.—*The Mental Peculiarities and Disorders of Childhood.* By Dr. CHARLES WEST, Visiting Physician to St. Bartholomew's Hospital, &c.

(*Medical Times and Gazette*, Feb. 11, 1860.)

No one can have watched the sick bed of a child without being struck by the almost unvarying patience with which its illness is borne, and the extremity of the peril from [illegible] apparently in consequence of that patience, a complete recc [illegible].

No sorrow, gloomy foreboding, remorse, disappointment, nor anxiety, depresses the spirits and weakens the vital powers. Death, in general, brings no alarm. To keep the child happy, remove all causes of alarm, suffering, and discomfort; modify the treatment so as to escape a struggle with waywardness, and if death appears imminent, look at it from a child's point of view; all these are duties of the utmost importance both for physician and parents.

The mind of the child is feebler than that of an adult, but is proportionally active, and vivid in its imaginations. The child who dreads solitude, and asserts that it hears sounds or sees objects, often tells a literal truth. The sounds have been heard; in the stillness of the nursery, the little one has listened to what seemed to be a voice calling it; or, in the dark, phantoms have risen before its eyes, and the agony of terror betrays an impression far too real to be explained away, or to be suitably met by hard words or unkind treatment.

Disorder of the cerebral functions greatly exaggerates these impressions. Hence, the circumstances surrounding a child, whether in health or disease, are of vast importance, and should never be lost sight of in the treatment.

The passions, too, of a child, are exaggerated as a general rule. Reason as yet does not govern its caprices. There is also an intense craving for sympathy, which sometimes becomes quite uncontrollable, and requires as much care and judicious management as in the case of an adult monomaniac. As in diseases of the body, so in affections of the mind in early life, the power of repair causes a constant hope, which is not to be indulged in the cases of adults. Dullness, apathy, and cerebral disturbance, have, therefore, not so grave an import as at a more advanced age. The whole of the intellectual energy is expended on the child's commerce with the world; his relations to it are disturbed, hence, the want of interest, the slowness to resume the lively prattle after sickness, should not be viewed with too much apprehension. The memory of a child is feeble, and when recovery takes place, it has to learn again its old lessons, and with weakened faculties. This process will extend over a longer time in proportion as it was younger at the time of the illness.

One thing should be remembered, in protracted illness, even when unaccompanied with disorder of the brain—the sense of hearing may be impaired, and this may be one cause of the child's dullness. The arrest of development, or the positive retrocession of the mental faculties is of far less import than any perversion of the moral powers. The child who, in spite of dullness, manifests the ordinary childish feelings, may be much improved by judicious training. We must also, in forming an estimate of these capabilities, consider the accompaniments of the sickness. Convulsions or serious cerebral disturbance will correspondingly impair more profoundly the intellectual powers, and retard the recovery. It must be remembered that a very large number of children whose progress has been arrested at an early age are allowed to grow up without any culture, and much of their dullness may be due to neglect. Apart from congenital instances, where mind and body are alike arrested in development, or are alike feeble and deformed, the state of the moral powers is more important as a guide to the prognosis than the condition of the intellectual. Want of affection, mischief,

spite, causeless rage, are less hopeful than intellectual dullness, and the first step should be the establishment of moral control. It should be borne in mind that the heart may break or reason fail under causes seemingly insufficient, and the griefs of childhood may be as overwhelming as those of the strong man. The intellectual powers should never be overtasked. Thus may be laid the foundation of hydrocephalus, or the tubercular cachexia, the destruction of the nervous system or serious injury to the moral character.

Occasionally, children exaggerate their ailments, or feign those which have no existence, and they will put up with scanty fare and painful treatment as long as they can engross attention, and be the centre around which the household turns.

ART. 182.—*On Abscess of the Iliac Fossa in children.* By M. BOUCHUT.
(*Journ. de Méd. et de Chir. Prat.*, Oct., 1859.)

M. Bouchut states that iliac abscess is rare except in the puerperal state; and especially rare in children. It may be consecutive to inflammation of the cæcum, or produced by foreign bodies perforating the cæcal appendix. Sometimes the iliac abscess arises from psoritis, or from laceration of the psoas muscle. But the proof that this abscess is most commonly produced by foreign bodies, is afforded by its almost constant occurrence in the right side, in the neighbourhood of the ileo-cæcal appendix. Of fifty-seven non-puerperal iliac abscesses collected by M. Grisolle, nine only were on the left side; while, of twenty-six puerperal abscesses, fifteen were on that side. These inflammatory tumours are sometimes situated in the peritoneum, in front of the cæcum; in other cases, they are beneath the peritoneum, and even under the aponeurosis. The intraperitoneal tumours are generally superficial; they depress the cæcum, and impede the passage of fæces. When situated behind the cæcum, they are sometimes very difficult of detection. The phlegmasiæ of the iliac fossa manifest themselves sometimes without premonitory symptoms, sometimes after a rigor; there is always severe pain, resembling that of peritonitis. M. Bouchut is of opinion that, by energetic treatment in an early stage, suppuration may be obviated. If pus is formed, it may be discharged in various directions. When the abscess is superficial, it may open outwardly; if adhesions have been formed between the intestine and the abscess, this may open into the intestine. M. Grisolle and M. Bouchut have each seen a case in which the abscess has opened into the vagina; in other cases the abscess may open into the bladder or peritoneum. Of fifty-six non-puerperal cases collected by M. Grisolle, thirteen were fatal. The treatment according to M. Bouchut, should consist in the early and repeated application of leeches. If the touch indicates the presence of pus, an incision should be made parallel to Poupart's ligament down to the peritoneum. An exploratory puncture having been then made, the incision is to be enlarged, if pus is present; and the wound should be kept open by lint, over which a poultice is to be applied. If the abscess is deep-seated, the treatment should consist in the use of emollients and baths, so as to assist the efforts of nature at elimination. If there be a tendency to induration, flying blisters may be applied; although M. Bouchut does not think that they are so efficacious in cases of suppuration as has been supposed.



REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

July—December, 1860.

THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report, to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

I.

REPORT ON PRACTICAL MEDICINE.

Cellular Pathology as based upon Physiological and Pathological Histology. By RUDOLF VIRCHOW, Public Professor in Ordinary of Pathological Anatomy, General Pathology and Therapeutics, in the University of Berlin, &c. Translated from the Second Edition of the Original, by FRANK CHANCE, B.A., M.B. Cantab., M.R.C.P. (8vo, London, Churchill, 1860.)

This work consists of twenty lectures, delivered by Professor Virchow, in the Pathological Institute of Berlin, during the months of February, March, and April, 1858. In these lectures, according to the author's own statement in the preface to the first edition, "the object aimed at was to furnish a clear and connected explanation of those facts upon which, according to my ideas, the theory of life must now be based, and out of which also the science of pathology has now to be constructed. They were more particularly intended as an attempt to offer, in a better arranged form than had hitherto been done, a view of the cellular nature of all vital processes, both physiological and pathological, animal and vegetable, so as distinctly to set forth what even the people have long been dimly conscious of, namely, the unity of life in all organized beings, in opposition to the one-sided humoral and neuristical (solidistic) tendencies, which have been transmitted from the mythical days of antiquity to our own times, and at the same time to contrast with the equally one-sided interpretations of a grossly mechanical and chemical bias—the more delicate mechanism and chemistry of the cell."

In dealing with a work the scope of which is so wide, and the object so important, our task is much simplified by a further statement

of the author. "Those," he writes, "who have found leisure enough to keep up their knowledge by reading the current medical literature will find but little that is new in these lectures." This observation at once puts aside the necessity which otherwise we might have thought to have existed on our part, of indicating to what extent several of Professor Virchow's more generalized views had already been adopted by thoughtful men; but, on the other hand, it is proper to remark, that the Professor's observation fails in one important respect in justice to himself. Although it may be true that those who have kept themselves abreast of advancing physiological and pathological research, "will find but little new in these lectures," it is not to be forgotten that Professor Virchow has long been one of the chief and most successful workers in both fields of research, and, that moreover, these lectures will give the precision of a well-considered theory to many vague ideas which have of late been floating in the minds of pathologists. Further, whatever may in the end come of the theory advanced by the learned Professor, whether it will stand its ground in its present form, or prove the stepping-stone to a clearer generalization, it is most certain that the lectures in which it is embodied, will have a most powerful influence in advancing pathological research.

If, however, as we have already said, our task in reviewing this work has been somewhat simplified by the prefatory remarks of the author, it has not on that account become an easy one. For the book so abounds with minute histological details necessary to the full development of the author's ideas, that it is hopeless to give a correct notion of the elaborate manner in which he illustrates his arguments, in the restricted space at our disposal. We shall endeavour, therefore, solely to lay before our readers so much of our author's theory as may suffice to show its general bearings and tendency, and to give one or two illustrations of the manner in which it would trench upon certain commonly received doctrines in pathology.

"The chief point," states Professor Virchow, "in the application of histology to pathology is to obtain a recognition of the fact, that the cell is really the ultimate morphological element in which there is any manifestation of life, and that we must not transfer the seat of real action to any point beyond the cell." And further he says, "It is almost impossible for any one to entertain more mechanical ideas in particular instances than I am wont to do, when called upon to interpret the individual processes of life. But I think we must look upon this as certain, that, however much of the more delicate interchange of matter, which takes place within a cell, may not concern the material structure as a whole, yet the real action does proceed from the structure as such, and that the living element only maintains its activity as long as it really presents itself to us as an independent whole."

Starting with these propositions, it is important in the first place clearly to know what is to be understood by the term *cell*. Now, the comparison usually made between the animal and vegetable cell is, as a rule, inadmissible. The full equivalents of the vegetable cell, in the old



ion of the term, are not to be found in animal tissues. The ...ose membrane of the vegetable cell does not correspond to the ...embrane of an animal cell. "Between this, as containing nitrogen, and the former, as destitute of it, no typical distinction is presented. On the contrary, in both cases we meet with a body essentially of a nitrogenous nature, and, on the whole, similar in composition. The so-called membrane of the vegetable cell is only met with in a few animal tissues, as, for example, in cartilage; the ordinary membrane of the animal cell corresponds, as I showed as far back as 1847, to the primordial article of the vegetable cell. It is only when we adhere to this view of the matter, when we separate from the cell all that has been added to it by an after-development, that we obtain a simple homogeneous, extremely monotonous structure, recurring with extraordinary constancy in living organisms."

In such a cell, certain dissimilar constituents can be distinguished, (1) a *nucleus* which, generally speaking, may be said to maintain a nearly constant form so long as the life of the cell has not been brought to a close: (2) in completely developed cells, a *nucleolus*, which, "seems to mark a higher degree of development in the cell,"—a *final* not an *initial* phenomenon, as Schleider and Schwann held. The nucleus most probably plays a highly important part within the cell, a part, "less connected with the function and specific offices of the cell, than with its maintenance and multiplication as a living part." (3) The *contents* of the cell, apart from the nucleus and its contents. Now, upon the character of these contents, and not upon the other constituents of the cell (membrane and nucleus), the special peculiarities of cells are due, those which give rise to the functional differences of tissues.

"For us," writes our author, "it is essential to know that in the most various tissues these constituents, which, in some measure, represent the cell in its abstract form, the nucleus and membrane, recur with great constancy, and that by their combination a simple element is obtained, which throughout the whole series of living vegetable and animal forms, however different they may be externally, however much their composition may be subjected to change, presents us with a structure of quite a peculiar conformation, as a definite basis for all the phenomena of life."

According to Professor Virchow, this is the only starting point for all biological doctrines, and he further conceives that "every more highly developed organism, whether vegetable or animal, must necessarily, above all, be regarded as a progressive total, made up of larger or smaller number of similar or dissimilar cells." He has considered it necessary, therefore, to portion the body into *cell-territories*. In the animal organization there are found large masses of *intra-cellular substance*, a peculiarity scarcely met with in vegetables. This substance is dependent in a certain definite manner upon the cells, and it is requisite to draw boundaries in it, so that certain districts belong to one cell, and certain others to another. These boundaries are often sharply defined in pathological processes.

"But" he continues, "there are simple tissues which are composed

entirely of cells, cell lying close to cell. In these there can be no difficulty with regard to the boundaries of the individual cells, yet it is necessary that I should call your attention to the fact that, in this case, too, every individual cell may run its own peculiar course, may undergo its own peculiar changes, without the fate of the cell lying next it being necessarily linked with its own. In other tissues, on the contrary, in which we find intermediate substance, every cell, in addition to its own contents, has the superintendence of a certain quantity of matter external to it, and this shares in its changes, nay, is frequently affected even earlier than the interior of the cell, which is rendered more secure by its situation than the external intercellular matter. Finally, there is a third series of tissues, in which the elements are more intimately connected with one another. A stellate cell, for example, may anastomose with a similar one, and in this way a reticular arrangement may be produced, similar to that which we see in capillary vessels and other analogous structures. In this case it might be supposed that the whole series was ruled by something which lay who knows how far off; but upon more accurate investigation, it turns out that even in this chainwork of cells a certain independence of the individual members prevails, and that this independence evinces itself by single cells undergoing, in consequence of certain external or internal influences, certain changes confined to their own limits, and not necessarily participated in by the cells immediately adjoining.

"That which I have now laid before you will be sufficient to show you in what way I consider it necessary to trace pathological facts to their origin in known histological elements; why, for example, I am not satisfied with talking about an action of the vessels, or an action of the nerves, but why I consider it necessary to bestow attention upon the great number of minute parts which really constitute the chief mass of the substance of the body, as well as upon the vessels and nerves. It is enough that, as has for a long time been the case, the muscles should be singled out as being the only active elements; within the great remainder, which is generally regarded as an *inert mass*, there is in addition an enormous number of active parts to be met with.

"Amid the development which medicine has undergone up to the present time, we find the dispute between the humoral and solidistic schools of olden times still maintained. The humoral schools have generally had the greatest success, because they have offered the most convenient explanation, and, in fact, the most plausible interpretation of morbid processes. We may say that nearly all successful practical, and noted hospital, physicians have had more or less humoro-pathological tendencies; aye, and these have become so popular, that it is extremely difficult for any physician to free himself from them. The solido-pathological views have been rather the hobby of speculative inquirers, and have had their origin not so much in the immediate requirements of pathology, as in physiological and philosophical, and even in religious speculations. They have been forced to do violence to facts, both in anatomy and physiology, and have therefore never become very widely diffused. According to my notions the basis of both

doctrines is an incomplete one; I do not say a false one, because it is really only false in its exclusiveness; it must be reduced within certain limits, and we must remember that, besides vessels and blood, besides nerves and nervous centres, other things exist, which are not a mere theatre (Substrat) for the action of the nerves and blood, upon which these play their pranks."

Professor Virchow having thus asserted the importance of the cellular constituents of the body proceeds next to show that whether we compare large cells with small ones, pathological or physiological, we invariably find they all possess the same typical characters. Further, we can no longer hold that cells are developed out of parts previously destitute of form. The doctrines of *plastic matter*, *blastema*, *cytoblastema*, the Professor conceives are definitively set aside by the progress of later researches, and along with these doctrines those which hold that in inflamed organs an exudation of albuminous or fibrinous matter is the first stage in any organising process which may take place, as a consequence of the morbid action. "Even in pathology we can now go so far as to establish, as a general principle, *that no development of any kind begins*, de novo, *and consequently as to reject the theory of equivocal* [*spontaneous*] *generations, just as much in the history of the development of individual parts as we do in that of entire organisms.* Just as little as we can now admit that a tænia can arise out of sub-anal mucus, or that out of the residue of the decomposition of animal or vegetable matter, an infusorial animalcule, a fungus, or an alga, can be formed, equally little are we disposed to concede either in physiological or pathological histology, that a new cell can build itself up out of any non-cellular substance. Where a cell arises, there a cell must have previously existed (*omnis cellula e cellula*), just as an animal can spring only from an animal, a plant only from a plant. In this manner, although there are still a few spots in the body where absolute demonstration has not yet been afforded, the principle is nevertheless established, that in the whole series of living things, whether they be entire plants or animal organisms, or essential constituents of the same, an eternal law of *continuous development* prevails. There is no discontinuity of development of such a kind that a new generation can of itself give rise to a new source of developmental forms. No developed tissues can be traced back either to any large or small simple element, unless it be unto a cell."

Normal tissues may be arranged in three classes: (1) where cell lies close to cell—cellular tissue in the modern sense of the word: (2) where the cells are separated the one from the other by a certain amount of intermediate matter—the connective tissues, and of which what was formerly universally called cellular tissue, constitutes the chief portion; (3) in which the cells have attained specific, higher forms of development—the nervous and muscular systems, &c. The word tissue is, however, commonly used in a much wider sense than this simple classification admits. We speak of osseous tissue as meaning bone, of cerebral matter as identical with nervous tissue. But no bone consists entirely of tela ossea; it has necessarily superadded at least periosteum and vessels. "Before we come therefore

to *systems* or *apparatuses*, properly so called, the special subject of descriptive anatomy, a long series of gradations must be traversed, and in discussions we must always begin by having a clear idea of what the question is. When bone and osseous tissue are confounded together, the extremest confusion is occasioned, and so also when it is sought to identify nervous with cerebral matter. The brain contains many things which are not of a nervous nature, and its physiological and pathological conditions cannot be comprehended if they are regarded as occurring in an aggregation of purely nervous parts, and no consideration is paid to the membranes, and the interstitial substance, as well as the nerves."

Now the types which may be established for the physiological tissues, hold good also of the pathological ones. Every pathological structure has a physiological prototype, and no form of morbid growth arises which cannot in its elements be traced back to some model which had previously maintained an independent existence in the economy.

"A classification of pathological structures also may be made upon exactly the same plan as that which we have already ventured upon in the case of the physiological tissues. In the first place, there are also among these structures some which, like the epithelial ones, are essentially composed of cellular elements, without the addition of anything else of consequence. In the second place, we meet with tissues which are allied to those called connective, inasmuch as in addition to the cells a certain quantity of intercellular substance is present. In the third and last place come those formations which are akin to the more highly organized structures, blood, muscles, nerves, &c. Now, a point to which I must at once direct your attention is, that in pathological formations those elements the more frequently exist, and the more decidedly prevail, which do not represent the higher grades of really animal development, and that, therefore, on the whole, those elements are most rarely imitated which belong to the more highly organized, and especially, to the muscular and nervous, systems. Still, these formations are by no means excluded; we find pathological new formations of every description, no matter to what tissue they may be analogous, provided it possess distinctive features. It is only with regard to their frequency and importance that a difference prevails, and this is of such a nature that the great majority of pathological productions contain cells analogous to epithelial cells, or to the corpuscles of the connective tissues, and that of those structures which we have included in the last class of normal tissues, the vessels and parts which may be compared with lymph and lymphatic glands are the most frequently met with as new formations, whilst real blood, muscles, and nerves, are the most seldom found as such.

"But, if we ultimately arrive at such a simple view of the matter, the question of course arises, what becomes of the doctrine of the *heterology* of morbid products, to the upholding of which we have long been accustomed, and to which the most simple reflection almost inevitably conducts us. Hereunto I can return no other answer than that there is no other kind of heterology in morbid structures than

the abnormal manner in which they arise, and that this abnormity consists either in the production of a structure at a point where it has no business, or at a time when it ought not to be produced, or to an extent which is at variance with the typical formation of the body. So then, to speak with greater precision, there is either a *Heterotopia*, an aberratio loci, or an aberratio temporis, a *Heterochronia*, or lastly, a mere variation in quantity, *Heterometria*. But we must be very careful not to connect this kind of heterology in the more extended sense of the word with the notion of *malignity*. Heterology is a term that, in its histological meaning, may be applied to a large proportion of pathological new formations, which, as far as the prognosis is concerned, may unquestionably be called benignant: it is not rare for a new formation to occur at a point where it is certainly entirely misplaced, but at the same time does not occasion any considerable mischief. A lump of fat may very likely arise in a place where we should expect no fat, as, for example, in the submucous tissue of the small intestines, but, let the worst come to the worst, the result is only a polypus, which protrudes on the inner surface of the bowel, and may become tolerably large without giving rise to any symptoms of disease."

Again:

"According to this manner of viewing the subject, which is essentially different from that previously current, no attention is therefore paid, in considering the question of the heterologous or homologous nature of a new formation, to the composition of the structure as such, but only to the relations which subsist between it and the parent evil from which it springs. Heterology in this case, designates the difference of development in the new, as contrasted with the old, tissue, or, as we are wont to say, a *degeneration*, a derivation from the typical conformation."

This view has a most important bearing on prognosis, because, as practical experience has fully shown, it is altogether incorrect to conclude from the mere correspondence of the pathological tissue with a physiological one, that the case would continue to follow a benignant course.

Passing by Professor Virchow's opinions on histological and pathological substitutions, we pass on briefly to notice one or two points in the subsequent development and application of the theory. He proceeds, first, to show that the nutrition of parts is dependent upon the elements of the parts themselves and not upon the vessels, and that it is erroneous to hold that the nutrition of a part is regulated by the amount of blood flowing through its vessels.

"If," writes the Professor, "we cut off or diminish the supply of nutritive matter, we must of course prevent the part from absorbing more than its wont, but *vice versâ* we cannot by offering it a larger quantity of nutritive material straightway compel it to take up more than it did; these are two entirely independent cases. However apt one may be to conclude (and however much I may be disposed to allow, that at the first glance there is something very plausible in such a conclusion) that, from the favorable effect which the cutting off of

the supply of blood has in putting a stop to a process which arose from an increase of it, the process depended upon this increased supply, yet I am of opinion that the practical fact cannot be interpreted in this way. It is not so much an increase of quantity, either in the blood as a whole or in that portion of it contained in an individual part, which is required in order that a like increase should forthwith take place in the nutrition of that part, or of the old body, as that, in my opinion, particular conditions should obtain in the tissues (irritation) altering the nature of their attraction for the constituents of the blood, or that particular matters should be present in the blood (specific substances), upon which definite parts of the tissues are able to exercise a particular attraction."

The specific action of the elements of tissues as opposed to theories of vascular and nervous action in the development of disease is then pursued in great detail in its application to the pathological condition of the fluids and solids of the system, and with most important consequences. Thus of the pathological states of the blood, Professor Virchow concludes that "*every dyscrasia is dependent upon a permanent supply of noxious ingredients from certain sources.*" The essential point, therefore, is to search for the *local origin* of the different dyscrasia. This idea is worked out elaborately in his examination of the various pathological states of the blood. We cannot, however, in the space at our disposal, attempt to give any summary of the application of Professor Virchow's theory to different active and passive morbid processes. Indeed, we question if a correct idea of this application could be obtained from any other source than the book itself. This work will, in future, be essential to the pathologist, not as much, perhaps, from the theory it advocates (although we would not underrate this), as from the numerous, important, and highly suggestive details, as well histological as pathological, with which the pages abound. A translation was certainly wanted, and this want Dr. Chance has supplied in a manner which is deserving of all praise. What is supplied, also, wants none of the attractions which are due to good type, good paper, and numerous illustrations, so that publisher, as well as translator, deserves honorable mention.

Mind and Brain; or, the Correlations of Consciousness and Organization; with their applications to Philosophy, Zoology, Physiology, Mental Pathology, and the Practice of Medicine. By THOMAS LAYCOCK, M.D., F.R.S.E., Professor of the Practice of Medicine and of Clinical Medicine, and Lecturer on Medical Psychology in the University of Edinburgh. (Post 8vo, Edinburgh and London, 2 vols., 1860.)

This work, the author tells us, arose out of a necessity he felt when called upon to deliver a course of lectures on Medical Psychology in the University of Edinburgh—a necessity "for an introductory exposition of the correlations of physiology and philosophy, according to a method whereby the reciprocal relations of body and mind—the subject

matter of medical psychology—could be scientifically and practically determined." The work has, therefore, a twofold object, "namely—first, as a class-book, to introduce the student of medical psychology to a comprehensive inquiry into the relations of consciousness and organization; secondly, to afford to the general student of mental science, in its practical applications, whatever these may be, a solid foundation for a course of self-culture in an exposition of the relations of organization and consciousness."

In order to give a clear idea of the manner in which Professor Laycock has accomplished his arduous task, we avail ourselves of the summary which is given in the work itself.

"The First Part of the work," the author says, "sets forth the necessary connection between Physiology and Mental Philosophy; states the objects which a correlative method of inquiry should aim at; and inquires into the obstacles to scientific progress which have arisen out of the divisive method. In these chapters the same idea is necessarily examined under various aspects; and therefore the style has a tautological character, which would have been avoided if that had been possible. The method proper is then developed; and while it is shown how a teleological unity may be attained, it is also established as a fundamental principle, that any practical science of Mind must be founded on, and be tested by, the common sense and experience of mankind.

"In the Second Part, the results of that experience, and the general doctrines reached by speculation and the divisive method, are systematically summarised, so as to constitute them the platform for the scientific portion of the inquiry. Much of this Part must necessarily be familiar to the philosophical reader, and might therefore have been omitted, so far as he is concerned. Such a summary seemed to be necessary, however, for that large class of students who have little time or taste for the study of metaphysics.

"The Third Part is that which commences the scientific portion of the work; it is occupied with the causes of Life and Consciousness. Of late years science has developed the unity of the physical forces, and reduced them to a general law of transference of force; the correlations of the physical and vital forces in this respect have also been marked out. But no one has shown how forces are transferred so as to attain the ends which are observed to be attained by the operation of the vital forces; nor has any one attempted to throw a scientific bridge across the impassable gulf which has hitherto appeared to separate the phenomena of life and organization and of thought. Now, the author has aimed to overcome this difficulty by a new and very simple method, and one perfectly available, as he believes, for all purposes of inquiry. Looking at the two classes of phenomena, and examining what they have in common, this principle is deduced—viz., That whereas Mind designs, Life is designed. Design, therefore, is common to both; but in one there is a conscious energy of design, in the other an unconscious. And this further law of correlation is universally manifest—viz., That the results of the vital forces, operative according to a law of design, coincide with the various states of consciousness known as desires, feelings, and the like. Hence a general law of design, with its derivative laws, correlates both the laws of life and of consciousness.

"In the Third Part, the principles of Teleology, or Mental Dynamics, are developed from this law of design, and ideas are considered as causes not only of life and thought, but of all the phenomena of creation. It is this part of the work which will probably attract more critical attention than others. The author would therefore state here, that the views therein developed are intended to be wholly scientific. Mind is simply considered as an ordering force in creation, to be examined according to the usual method of scientific research; that is to say, as it is manifested in the sequences and co-existences of phenomena. There is no discussion as to the nature of soul, mind, or spirit, such as is found in psychological works generally; and thus the phenomena are examined wholly apart from those philosophical and theological speculations which are altogether foreign to science. In introducing, therefore, so much of these speculations as is to be found in this Part, the author had solely in view the restriction of the inquiry within its proper limits.

"Having thus established a system of general principles, the author proceeds to apply them in succession to the general laws of Life and Organization, or Biology; to the development of a scientific Cerebral Psychology; and to the first principles of a Mental Physiology and Organology. By this method the reader is thus first led up to the great general laws of all phenomena over which mind, considered as an order-force, dominates; and thence downwards, through the great laws of archetypal development and physiological change, to the derivative, special, and ever-varying phenomena of consciousness and life. In examining the latter, the author has more fully developed that great law of unconscious functional activity of the brain as the organ of consciousness —which he was the first to demonstrate. Although it is a law without which no physiological explanation of the phenomena of consciousness is possible, yet it is more especially applicable to the phenomena of latent consciousness."

Notwithstanding the vast scope of the book, and the necessity which has existed for condensing it within the smallest possible compass, the author has, in every stage of his inquiries, kept in view either the solution of practical questions, or the suggestion of new methods of inquiry, and of new principles by which that solution may be reached. Further—

"The entire scope of the work is to carry up the doctrine of final causes, in a connected form, to its highest uses; and to show that Mind is the final cause, as an ordering force, of all the physical forces, and of all their derivative manifestations in the phenomena of creation. Under the guidance of this principle, that union of the two great departments of human knowledge, hitherto so sedulously kept apart, is attained. Thus, the work, it is hoped, may serve to advance both; for, on the one hand, the phenomena of Life and Organization are brought into the domain of Philosophy; on the other, the phenomena of Thought are brought into the domain of Physiology. The unifying principle, that mind is dominant over matter and its forces, enables us to compare and generalise phenomena hitherto considered wholly discordant, so as to harmonise them, and thereby to break through that eternal maze of contradictions, as to reason and instinct, consciousness and unconsciousness, life and intelligence, within which all philosophical inquiry has been so

long involved. By adding physiology to philosophy, we place philosophy at the head of the inductive sciences, and at the same time bring all the sciences of Life and Organization into philosophical relation and unity. The basis of this unity is Teleology, applied deductively and inductively to all the phenomena which science investigates."

A class-book has long been wanted by the medical and general student in psychology and biology, which would inculcate sound and far-sighted views, and at the same time counteract that immaturity of thinking, too prevalent in the present day, of the ill effects of which we have examples in the opposite schools of "secularism" and "spiritualism," and this want, we can honestly say, has been supplied by Professor Laycock in a manner which leaves little to be desired.

The Condition of the Blood in Mania. By Dr. W. CHARLES HOOD, Physician to Bethlehem Hospital. ('Medico-Chir. Trans.,' vol. xxv, 1860.)

Following in the steps of Drs. Hittorf and Erlenmeyer, Dr. Hood (aided by Dr. Marcet) has instituted a careful analysis of the state of the blood in acute mania, and the conclusion at which he has arrived is that *there is a marked deficiency of fibrine during the period of maniacal excitement, and a correction of this deficiency during convalescence.* The cases are six in number.

CASE 1.—*Acute mania.*—W. G—, æt. 21, admitted into Bethlehem Hospital in December, 1856, became maniacal one month before admission. Hereditary tendency traceable in both his father and paternal grandfather. There was no apparent bodily disease. The patient was of spare habit and an excitable temperament, and had not been subject to any medical treatment previous to his admission. Nourishing diet was prescribed, and the following sedative mixture: acetate of morphia, half a grain; tincture of hyoscyamus, one drachm; camphor mixture, eleven drachms,—three times a day. At the end of a fortnight, the morphia was increased to one grain, three times a day. In September, 1857, he was discharged cured.

Analysis of the Blood.

During maniacal excitement.		When discharged cured.	
Water	777·39	Water	784·93
Red particles	149·74	Red particles	110·07
Fibrine	1·74	*Fibrine*	2·20
Albumen, &c.	63·28	Albumen, &c.	90·63
Inorganic salts	7·85	Inorganic salts	8·00
Fatty matter	0·00	Fatty matter	4·17
	1000·00		1000·00

CASE 2.—*Acute mania.*—W. T. G—, a drum major in the Guards, admitted into Bethlehem Hospital in March, 1857; was married, and had lived a temperate life. He was very excited, noisy, mischievous, and incessantly talking. Morphia and sedatives, with full diet, were prescribed. In March, 1858, he was discharged cured.

Analysis of the Blood.

During maniacal excitement.		When discharged cured.	
Water	791·64	Water	758·76
Red particles	125·48	Red particles	140·61
Fibrine	1·55	*Fibrine*	2·75
Albumen, &c.	69·84	Albumen, &c.	87·28
Inorganic salts	8·98	Inorganic salts	8·82
Fatty matter	2·51	Fatty matter	1·78
	1000·00		1000·00

CASE 3.—*Acute mania.*—E. R—, married, and the mother of four children, was admitted into Bethlehem Hospital in June, 1857, and discharged cured in May, 1858.

Analysis of the Blood.

During maniacal excitement.		When discharged cured.	
Water	806·71	Water	800·90
Red particles	104·68	Red particles	109·32
Fibrine	1·67	*Fibrine*	1·75
Albumen, &c.	76·53	Albumen, &c.	74·99
Inorganic salts	7·41	Inorganic salts	8·89
Fatty matter	3·00	Fatty matter	4·15
	1000·00		1000·00

CASE 1.—*Recurrent mania.*—E. J. G—, a single woman, was received into Bethlehem Hospital in 1837; since which time she has been subject to repeated attacks of recurrent mania, the paroxysms lasting five weeks, and being followed by two weeks' tranquillity and apparent mental restoration.

Analysis of the Blood.

During maniacal excitement.		During the convalescent stage.	
Water	769·66	Water	811·68
Red particles	121·77	Red particles	126·01
Fibrine	1·38	*Fibrine*	2·88
Albumen, &c.	98·44	Albumen, &c.	47·54
Inorganic salts	3·13	Inorganic salts	9·31
Fatty matter		Fatty matter	2·58
			1000·00

CASE 2.—*Recurrent mania.*—F. B— was admitted into Bethlehem Hospital in the year 1838. The mental disease was clearly traceable to hereditary tendency. She suffers from alternations of mental excitement and tranquillity. The blood was taken in each of these states:—

Analysis of the Blood.

During the maniacal paroxysm.		During the convalescent period.	
Water	784·07	Water	765·73
Red particles	123·81	Red particles	139·05
Fibrine	0·06	*Fibrine*	2·46
Albumen, &c.	81·69	Albumen, &c.	81·75
Inorganic salts	8·62	Inorganic salts	8·09
Fatty matter	1·75	Fatty matter	2·92
	1000·00		1000·00

CASE 3.—*Recurrent mania.*—W. D— was admitted into Bethlehem Hospital in June, 1841, at the age of twenty-nine, since which time he has been subject to continued attacks of recurrent mania: for a month or six weeks he will be found rational and conversable; but during the succeeding five weeks or more, his entire mental condition appears to have undergone a revolution; irritability succeeds the natural amiability of his conduct, and he assumes the habits and bearing of a congenital idiot. The analysis of the blood was made at such periods as would best represent a fair specimen of each particular state:—

Analysis of the Blood.

During the maniacal paroxysm.		During the convalescent period.	
Water	773·86	Water	779·93
Red particles	135·56	Red particles	121·65
Fibrine	1·96	*Fibrine*	2·97
Albumen, &c.	79·22	Albumen, &c.	87·16
Inorganic salts	7·99	Inorganic salts	8·29
Fatty matter	1·41	Fatty matter	0·00
	1000·00		1000·00

On comparing these cases with those of an analogous character which have been put on record by Drs. Hittorf and Erlenmeyer, the lesson taught by them becomes more pointed and cogent.

M. Hittorf has recorded seven cases of acute mania in which he analysed the blood during the stage of maniacal excitement, and he concludes from them that there is in such cases a *diminution* in the amount of the globules and an *increase* in the amount of water; the cases, however, show more than this, for they prove *a distinct diminution in the amount of fibrine of the blood.*

M. Erlenmeyer states that he has made 304 analyses of the blood, principally in cases associated with other internal diseases. He only details three cases; in two of them mania was accompanied by epilepsy. The conclusion drawn by Dr. Erlenmeyer from these cases, and from others not quoted, is, that augmentation in the number of red particles or in the amount of fibrine is a very unusual occurrence in insanity, and that the opposite state is the most frequent condition.

In all these cases, therefore, that have been instanced, there is a material deficiency in the amount of fibrine in the blood. Of Dr. Hittorf's seven cases, in six the amount of fibrine stands 1·3, 1·4, 1·8, 1·9, 1·9, 2·0. In Dr. Erlenmeyer's three cases the amount of fibrine stands 1·7, 1·8, 2·3. In Dr. Hood's

six cases, the fibrine *in all* falls considerably below the normal standard, as follows: 1·9, 1·7, 1·6, 1·5, 0·06. Surely these results express something more than an accidental coincidence.

On Inhibitory Influence. By Dr. C. Handfield Jones, Physician to St. Mary's Hospital, &c. ('British Medical Journal,' 5th Feb., 1859.)

The view maintained in this paper is a modification of the one previously adopted by Mr. Lister.* It is to the effect that sensory or afferent nerves may, under the influence of some injurious abnormal impression, induce a paralytic state of the nervous centre with which they are connected, and that in this way a state of paralysis more or less complete may be set up in musculo-motor nerves, or in vaso-motor nerves, or in nerves of special or common sensation—common muscular paralysis being the result where the musculo-motor nerves are affected, vascular congestion or inflammation where the vaso-motor nerves are implicated, pain, amaurosis, &c., where the mischief is reflected to a nerve of common or special sensation.

In proposing this view the author cites some experiments by Pflüger, Lister, and Weber, upon which the notion of inhibitory influence is founded; and taking these experiments as a basis, he then refers to various pathological facts by Graves, Frank, Copland, Stanley, Brown-Séquard, and others, which receive explanation from, and in their turn confirm and modify them—cases of reflex paraplegia, a case of amaurosis and facial paralysis from exposure of the side of the face to cold, and so on.

"Now in all these cases," says Dr. H. Jones, "the one common thing that I observe is, that certain sensory or afferent nerves are affected by an *abnormal, injurious* impression, which being conveyed to the centre, spinal, or sympathetic, sets up a state there which is incompatible with the discharge of its function, whether that be connected with motion, or special or common sensation. It can hardly, I think, be said that the causes of irritation and paralysis cited above induced *energetic* action of afferent nerves; they are almost all rather of a *depressing* kind, especially cold and wet, drinking cold water when heated, sudden perforation of a viscus, and burns. In fact a cure was obtained in some of the instances by appropriate stimulation of the originally affected sensory surface. Nor, indeed, do I think that in the experiments on animals before detailed it can quite safely be

* Mr. Lister takes up Pflüger's view, "that there is a certain set of nerve fibres whose sole function is to arrest or diminish action," and examines it fully with repeated testing by experiment. The result to which he arrives, as given at the end of his paper, is, that it may be regarded "as a fundamental truth not yet explained, that one and the same afferent nerve may, according as it is operating mildly or energetically, either exalt or depress the functions of the nervous centre upon which it acts. It is, I believe, upon this that all inhibitory influence depends, and I suspect that the principle will be found to admit of a very general application in physiology." Mr. Lister also, (and Dr. H. Jones allows this) foresees the bearing of this principle on pathology, and notices its probable concernment in the excitement of inflammation through the medium of the nervous system at a distance from the irritated part.

presumed that the stronger stimulus applied to the nerves, induced them to act more energetically. An interrupted galvanic current is not the normal stimulus to the nerves, and it is possible that the strong current may have been exhaustive and depressing. The case may perhaps be analogous to that of the moderate and excessive imbibition of a vinous stimulant. The former stimulates the brain and increases its vital activity; the latter depresses and disorders its action. It seems to me most probable that the same is true of galvanism as of heat and cold, respecting which agents Müller says, "heat and cold, when their action is not carried beyond a certain degree of intensity, nor continued beyond a certain time, are stimulants; but if their action be more violent and long continued, they have a contrary effect." It is only just to Mr. Lister to say that he has considered the question, as to the dependence of the inhibiting influence in his experiments on nervous exhaustion, and decides against that view, partly on account of "the very rapid recovery of the cardiac or intestinal actions when the inhibiting galvanic currents are discontinued. I have cited the above-mentioned actual occurrences as pathological experiments, so to speak, which as yet have hardly been interpreted, or their meaning been appreciated. They seem to me to afford tolerably conclusive evidence that impressions on afferent nerves may not only excite the nervous centres as in reflex action (the more common case), *but produce a directly opposite state of enfeeblement or depression.*"

Inhibiting influence is an unfortunate name, but the fact remains, and we quite agree with the author both as to the fact and as to its direct bearing upon the explanation of a great number of pathological facts. We are also disposed to adopt the explanation of Dr. Handfield Jones rather than that of Mr. Lister, as to the state of nerve by which the inhibiting influence is brought about.

On Myalgia: its nature, causes, and treatment; being a treatise on painful and other affections of the muscular system, which have been frequently mistaken for hysterical, inflammatory, hepatic, uterine, nervous, spinal, and other diseases. By Dr. Thomas Inman, Physician to the Liverpool Royal Infirmary, &c. (Second edition, 8vo, London, Churchill, 1860, pp. 307.)

This work is one which has twice before changed its title. Upon its first appearance, in 1856, it was under the name of 'Certain Painful Muscular Affections;' upon the next occasion, in 1858, its superscription was 'Spinal Irritation Explained.' A more extended experience, however, has proved that the subject has far wider ramifications than were at first dreamed of; and the author is now satisfied that muscular pain has as important a bearing upon hysterical, and inflammatory diseases as it has upon spinal affections. In choosing the present title, *Myalgia*, the author seems to have acted wisely, for the name is a convenient one, and it implies no other theory than that the muscles are the seat of pain.

In introducing what is thus in reality a *third* edition of an old

friend to our readers, we would simply say that the new cases and additional information contained in it confirm all the favorable impressions which we received and expressed on a former occasion.

Lectures on the diagnosis and treatment of the principal forms of Paralysis of the Lower Extremities. By Dr. C. E. Brown-Séquard. ('Lancet,' from August 21st, to November 10th, 1860.)

The principal object of these admirable lectures is to point out the characteristic features of that paralysis of the lower limbs which is due to an excitation proceeding to the spinal cord from a sensitive nerve, and which is known as *reflex paraplegia*, and to show that this form of the disease requires a plan of treatment which differs very materially from that which is required in paraplegia deriving its origin from primary mischief in the cord itself.

The absence of the special symptoms of an organic disease of the spine or its contents, and the existence of an incomplete paralysis of the lower limbs that has appeared somewhat slowly after a disease of the urinary or genital organs, or of some other abdominal viscus, after an inflammation of the lungs or pleuræ, or after some kind of irritation of a nerve in its trunk or in its cutaneous ramifications, are the general characteristics of *reflex paraplegia*. Most commonly the centripetal irritation of the afferent nerve, which is the *origo mali*, may be traced from the bladder or genital organs; but the cases given show very clearly that it may proceed from very different parts—from in fact, any organ or any part. Dr. Brown-Séquard considers it possible, if not probable, that the centripetal irritation in the nerve produces a reflex contraction in the blood-vessels of the spinal cord, and that the paralysis is brought about by the failure of nutrition in the cord which follows this condition of the vessels. He believes, indeed, that there is an anæmic condition in the part of the cord concerned—a condition which is the very opposite of that which obtains in the case where congestion of the cord and its membranes, or inflammation of the spinal meninges, or inflammation of the cord itself, is the cause of the paraplegic symptoms. In 144 cases of paraglegia, 42 were cases of myelitis, 33 of white softening, 25 of *reflex paraplegia*, 12 of congestion, 9 of tumour, or pressure upon the cord, 7 of spinal meningitis, 7 of hæmorrhage, 5 of hæmorrhage followed by myelitis, and 4 of hysterical paraplegia; hence reflex paraplegia is a sufficiently common form of the disease. It appears, also, from these statistics, that with the exception of the last-named form, men are much more frequently paralysed in their lower limbs than women.

In order to have a clear idea of the characteristics of the different forms of paraplegia, it would be well to follow Dr. Brown-Séquard, step by step, in his masterly account of each form; but it must serve our purpose (our space admitting no other course) to take the shorter plan of considering each of the most important symptoms, and shewing to what form of paralysis it is especially attached, and what is its cause—a comparison which is done for us by the author himself, and which cannot be improved or abridged.

"1st. *Cramps, twitchings, and other convulsions.*—The signification of tonic or clonic convulsions in paralysed muscles, in cases of paraplegia, is quite evident; they are incontestable results of an irritation of either the anterior roots of the spinal nerves, the spinal cord, or the sensitive nerves in any part of their length, through a reflex action. In cases of myelitis it is chiefly under the form of cramps that convulsions occur; the frequency of these spasms is one of the characteristics of this affection. In cases of tumours pressing upon the spinal cord, especially upon its posterior surface, cramps are not so frequent as twitchings or a general spasm producing a drawing up of the lower limbs, which sometimes remain permanently in a state of spasmodic flexion. In cases of chronic meningitis or congestion of the spinal cord or its membranes, twitchings are more frequent than cramps. In cases of reflex paraplegia, the external irritation that produces the paralysis sometimes produces also spasmodic movements by a reflex action. Especially in those cases where the rectum or the urethra are the parts from which starts the irritation, there is what the patient calls a *catchiness* or a drawing up of the legs. In cases of hæmorrhage in the spinal canal, tetanic convulsions are frequently observed. Rigid spasms of the muscles of the back are amongst the most prominent symptoms of spinal meningitis. Amonst the affections of the spinal cord that produce paraplegia, one of the most frequent—the non-inflammatory or white softening—is characterised by a total absence of cramps, twitchings, or other convulsions.

"On the whole, some form of morbid muscular contractions exists constantly in myelitis or spinal meningitis, and frequently in cases of congestion of the spinal cord or its membranes, or of tumours or other cause of pressure upon the spinal cord, and also, sometimes (by a reflex action), in cases of reflex paraplegia. On the other hand, a complete absence of morbid contractions will be observed in all cases of non-inflammatory softening, and in the majority of cases of reflex paraplegia.

"2d. *Referred sensations in the paralysed limbs.*—These morbid sensations, like morbid contractions, are the results of some kind of irritation, and the vital properties of the spinal cord changing when it is inflamed, these sensations may be produced by an inflammation of the gray matter. The various kinds of conductors passing through or along the gray matter being then irritated, give origin to all kinds of sensations which are *referred* to the various parts of the lower limbs. Sensations of cold or of heat, of touch (formication, tickling, pressure, tightness, &c.), of pain (pins and needles), and also sensations arising from muscles, and giving the idea that the limbs are in a different position from that in which they really are—in fact, all the sensations that pressure or some other cause of irritation may produce when applied to the ulnar or the sciatic nerves—are often observed. In myelitis, some of these sensations always exist; in meningitis, or when there is simply a congestion of the spinal membranes, most of them are also observed, but less intense than in myelitis. In cases of irritation of the posterior roots of nerves by a tumour or a displaced bone, &c., referred sensations exist also. In such cases of irritation by a tumour, &c., and also in cases of congestion or menin-

gitis, there is a feature which distinguishes these affections from myelitis; it is that in this last affection there may be a reference of sensations to all the parts of the body that receive their nerves from the part of the spinal cord which is below the upper limit of the inflammation, while in the three other affections the sensations are referred only to those parts of the body which receive their nerves from the part of the spinal cord at the level of the seat of the irritation. The non-inflammatory softening, a hæmorrhage, or a tumour in the gray matter (as long as they do not produce inflammation), and also the reflex paraplegia, are characterised by the absence of referred sensations.

"3d. *Feeling of tightness round the body, or round the lower limbs.*—This sensation, which is so frequent in myelitis, exists also, sometimes, in cases of tumours, of congestion of the spinal cord, and in meningitis. It is absent in cases of non-inflammatory softening and of reflex paraplegia.* From this last fact it results that the tightness across the chest or the abdomen, at the level of the upper limit of the paralysis, does not depend, as has been said, upon the effort made in moving the paralysed parts by the non-paralysed muscles just above them. Another objection to this explanation is, that the same feeling which exists around the body exists also, sometimes, around the lower limbs, in myelitis. This most probable mode of production of this strange feeling is, that it is due to some irritation of sensitive nerve-fibres in the spinal canal producing a sensation referred to the periphery of the body (abdomen, chest, or limbs.)

"4th. *Alterations in the nutrition of paralysed parts.*—These alterations chiefly depend upon an irritation of the spinal cord or its nerves. It is principally in myelitis that they are observed. A rapid wasting of the paralysed muscles, the production of bullæ or sloughs over the sacrum, the nates, &c., are the most frequent results of an irritation of the vaso-motor, or of the other nerves that have an influence upon the nutrition of the lower half of the body. These alterations are not observed in cases of reflex paraplegia, or of non-inflammatory softening of the spinal cord; neither do they exist in cases of hæmorrhage, or of a tumour in the gray matter, unless an inflammation is produced.

"5th. *Erection of the penis.*—This is another symptom showing an irritation of the spinal cord or its nerves. It exists frequently at night, and sometimes in the daytime, in cases of myelitis or congestion of the spinal meninges. It is also observed, but less frequently, in cases of meningitis, of tumour upon the spinal cord, of hæmorrhage in the spinal canal (outside of the cord), and sometimes even in the reflex paraplegia, but then only on the introduction of a catheter or in consequence of some peripheric irritation. This symptom does not exist in cases of non-inflammatory softening, or of hæmorrhage, or a tumour in the gray matter of the spinal cord.

* "I need not say that this symptom, as well as many others depending upon a degree of irritation of the spinal cord or its nerves, will be observed in cases of reflex paraplegia, or of non-inflammatory softening of the spinal cord, if in those cases there is some degree of congestion in the membranes or in the cord above the softened part, or that which causes the reflex paralysis."

"6th. *Temperature of the paralysed lower limbs.*—In those affections in which there is an irritation of the spinal cord or its membranes (congestion, myelitis, meningitis, pressure on the cord by effused blood, a tumour, or a displaced bone, &c.), the lower limbs, and especially the feet, are almost constantly very cold. This symptom is the consequence of the irritation of the vaso-motor nerves, which produces a contraction of the muscular fibres of blood-vessels, just as the irritation of the nerves of the muscles of the legs, feet, &c., produces cramps, twitchings, &c. In the reflex paraplegia the feet are also sometimes very cold, in consequence of a reflex contraction of their blood-vessels. In cases of non-inflammatory softening of the lumbar enlargement of the spinal cord, with a complete destruction of the vital properties of this part, the lower limbs are almost constantly very warm, as a result of the paralysis of the vaso-motor nerves.

"7th. *Degree and extent of paralysis of the lower limbs, the bladder, and the rectum.*—Of course great differences exist as regards the degree and extent of the paralysis, according to the degree and extent of the alterations in the spinal cord. We do not intend entering into any details on this subject. We wish only to say here that—1st, as regards *mode of appearance of the paraplegia*, if it be sudden it is almost always due to a hæmorrhage either in the cord or outside of it; 2d, as regards *the degree of the paralysis*, it is equal in all the muscles of the lower limbs if the alteration occupies the whole of the lumbar enlargement, or is above it, except in cases of reflex paraplegia, where some muscles may be much more affected than others; 3d, as regards *the changes in the degree and extent of the paralysis*, they are rapid and frequent in cases of reflex paraplegia, of chronic meningitis with effusion, and of spinal congestion, while, on the contrary, they are slow and rare in cases of myelitis, tumours, and non-inflammatory softening; 4th, as regards the paralysis of the bladder and of the rectum, they exist more frequently in cases of myelitis, of non-inflammatory softening, or of hæmorrhage in the gray matter, than in the reflex paraplegia or in cases of tumour, of congestion, or even of meningitis.

"8th. *Anæsthesia and Hyperæsthesia.*—Myelitis existing most frequently in the gray matter, anæsthesia (the different kinds of it, with the loss of the power of guiding the voluntary movements) is one of the ordinary symptoms of this affection. This symptom is less frequent or less intense in most other cases of paraplegia, except, of course, a hæmorrhage in the gray matter. As regards hyperæsthesia —*i .e.*, a morbidly increased insensibility, it is frequent in cases of incomplete paraplegia, when the posterior columns of the spinal cord, in a small part of their length, are destroyed, either by a tumour or by a softening (inflammatory or not).

"9th. *Reflex power.*—In all cases of paraplegia in which the lumbar enlargement of the spinal cord remains uninjured, the reflex power of that enlargement increases notably. On the contrary, the reverse is observed in cases of alteration of this enlargement."

— In a therapeutical point of view the principal object of these lectures is to point out the cases of paraplegia in which strychnia or belladonna, or ergot of rye are to be employed or avoided. Accord-

ing to the author, the various forms of the disease may be classed into two general groups: one in which the amount of blood circulating in the spinal cord is too considerable, and where mercury, ergot, and belladonna are required, because these remedies are supposed to have the power of diminishing the quantity of blood in the spinal cord; another, when the opposite condition of vascularity obtains, and where strychnia is called for, because strychnia is supposed to have the power of increasing the vascularity of the cord.

The treatment of *reflex paraplegia* is divided into; 1st, the means to be employed against the external cause of the affection; and 2d, the treatment of the paralysis itself. Dr. Brown-Séquard proceeds:

"As regards the first part, we will say nothing here, as we cannot enter into the details of the treatment of nephritis, cystitis, pneumonia, enteritis, and other morbid states that may cause a reflex paraplegia. As regards the direct treatment of this affection, we will first lay down the general rules of the treatment, and then we will enter into the most important details concerning this treatment.

"1. When it has been ascertained from what organ or from what nerve starts the nervous influence which causes a reflex paraplegia, besides the treatment that is appropriated to the nature of the local affection (of that organ or nerve), it is of the greatest importance to try to prevent or to diminish the transmission of any nervous influence from the diseased nerve or organ to the spinal cord. All the means usually employed to alleviate pain will be of service in such cases. If possible, we must try to paralyse for a time the sensitive nerves that convey the morbid influence to the spinal cord. Even a momentary suspension or diminution of the transmission of this influence may be very useful. Narcotics ought to be employed in injections,—in the bladder, if that organ be the place from which starts that morbid influence; in the vagina, if the uterus be the place; and in the rectum, if the large intestine be the place. Narcotics ought to be taken by the mouth if the stomach, the small intestine, or the kidneys are affected. In case of a pneumonia producing a reflex paralysis, inhalations of chloroform (which, by the way, have been successfully employed against the inflammation itself) may prove useful. We will say, by-and-by, what narcotics should be preferred.

"2. The object of the means just proposed is to diminish the cause of the paraplegia; the object of the means we will now speak of is just the same, although it may seem to be quite different. Excitants or revulsives applied to the skin of the legs have been warmly recommended by Graves, who has obtained good results from their use. Probably the mode of action of these means consists in producing for a short time the same effect as the irritation which is the cause of the paralysis—*i. e.*, a contraction of the blood-vessels of the spinal cord; but, according to a well-established law, if such a contraction becomes considerable, the muscular fibres are soon exhausted, and a relaxation of the contracted fibres takes place, and, as a consequence of this relaxation, a dilatation of the blood-vessels occurs. Of all the causes of irritation capable of producing a contraction of blood-vessels by a reflex action, none has more power than cold. In consequence of the fact, I think some of the modes of application of cold to the spine ought

to be employed in cases of reflex paraplegia. But the excitation in those cases must be very powerful, and able to produce a very considerable degree of contraction so that the consequent exhaustion and dilatation may be obtained. With the same view, we may employ a very powerful excitation of the skin along the spine, by interrupted currents.

"3. Another important principle, or rather another part of the same general principle of treatment, consists in making use of the following means to increase the quantity of blood in the spinal cord:—Every night, and often in the course of the day, the patient should lie down on his back, placing his head, his arms, and his legs on high pillows, so as to produce by gravitation a congestion in the spinal cord. This simple means, which is also applicable in cases of hysterical paraplegia and in almost all the cases in which there is an insufficient amount of blood in the spinal cord, is just the reverse of what should be done in cases of inflammation or congestion of the spinal cord or its membranes, or of disease of the spine, &c, in which cases the patient ought to lie flat on the abdomen or on one side of the body, and have his feet and hands on a much lower level than that of the spine.

"4. As regards the remedies to be taken by patients attacked with a reflex paraplegia, they must essentially be those which increase the amount of blood in the spinal cord, and augment the vital properties of this nervous centre, and also those remedies which render the blood richer in nutritive principles. We will soon indicate which are the best of these various remedies.

"5. As regards food and the hygienic rules, patients attacked with a reflex paraplegia must have the most substantial aliments, so as to improve the deficient nutrition of the spinal cord. They must take a great deal of exercise in the open air, and especially make use, as much as possible, of the paralysed muscles."

Entering into detail, and speaking of the means for diminishing the external irritation, our author says:

"No narcotic is more powerful than belladonna locally employed to diminish pain or to prevent a reflex action. Unfortunately, for reasons that will be fully developed in the next lecture, it would be very unwise to make a constant use of belladonna in cases of reflex paraplegia. In cases of disease of the urethra or the prostate, an injection of a solution of one grain of the extract of belladonna, in twenty drops of laudanum, is to be made into the urethra, and the injection should be retained half an hour, or even an hour, after which some emollient decoction should be employed to wash away the rest of the narcotics. Every two or three days the same operation should be repeated. In the intervening days, I advise the use of an injection of thirty drops of laudanum, without belladonna. In cases of a disease of the bladder, I recommend the use of an injection into the bladder of a solution of one grain of the extract of belladonna, in twenty drops of laudanum, just after a complete emission of urine. One day this injection is employed, and the next day twenty-five or thirty drops of laudanum alone are injected. When the prostate is very much enlarged, a suppository, covered with a belladonna-and-opium ointment, ought to be put, at times, in the rectum.

"When the irritation that causes a reflex paraplegia starts from the vagina or the uterus, a pill of half a grain of extract of belladonna with one grain of extract of opium, surrounded by a piece of cotton wool, is introduced far into the vagina, and even up to the neck of the uterus. By means of a thread attached to the cotton, it is withdrawn as soon as the pain has ceased or much diminished. This simple means I have seen often employed with benefit by my learned teacher, Professor Trousseau, in painful affections of the womb, and I have myself made use of it with great advantage in two cases of reflex paraplegia and in several cases of hysterical paralysis.

"In cases of a reflex paraplegia due to dysentery, colitis, or other morbid irritations of the large intestine, accompanied by diarrhœa, opium alone—*i. e.*, without belladonna—should be employed in enemata. In cases of paraplegia due to teething, if it coexists with enteritis, as it often does, opium is the narcotic to be employed, and it should then be taken by the mouth in very small but repeated doses. In cases of neuralgia producing a paraplegia, the narcotic that should be chiefly employed to relieve pain is opium, and so also in cases of paraplegia due to a disease of the stomach, the liver, the kidneys, the pleuræ; but even in all these cases, belladonna may be used with profit if united with opium, if it is not often employed, and especially if strychnine is also used at the same time. I could not insist enough upon the importance of the necessity of never using belladonna without employing at the same time strychnine and opium, or at least strychnine, in cases of reflex paraplegia. I must repeat also that in this affection, when belladonna is employed, its use ought not to be a constant one; and, if the patients are not very costive, opium ought always to be the principal narcotic used to alleviate the external irritation that causes the paralysis."

The means for increasing the nutrition of the spinal cord are classed in two groups—the medicinal and the physical. In the first group, sulphur, particularly in the form of baths containing sulphuret of potassia, is mentioned as a means which may do good. But strychnine is put forth as the remedy *par excellence*. "It is generally believed," says Dr. Brown-Séquard, "that strychnine acts on the spinal cord as an excitant—*i. e.*, in the same way as the application of galvanism, of heat, of a caustic, or a mechanical irritation. This is a great error; strychnine is not able to produce the least excitation on the spinal cord. The experiments of Van Deen, of Dr. Marshall Hall, those I made ten years ago, alone, or with my pupil, Dr. Bonnefin, and those recently published by M. Martin-Magron and M. Buisson, in their most important paper, 'On the Comparative Action of Woorara and Strychnine,' cannot leave the least doubt on this point. It is only in increasing the reflex faculty of the spinal cord that strychnine seems to cause convulsions. This vital property of the cord reaches such a very high degree, that any external or internal excitation brings on a reflex tetanic contraction, the violence of which, according to a well-known law, is in proportion to the degree of the reflex faculty. So long as the spinal cord does not receive some kind of excitation, however powerfully poisoned by

strychnine it may be, there is no convulsion. I have seen frogs, deprived of respiratory and voluntary movements (after the extirpation of the brain and the medulla oblongata), remaining hours, days, and even a week, without the least convulsion so long as they were not touched, although they were poisoned by a large dose of strychnine; but the least touch produced in them the most powerful reflex tetanic spasms.

"How does strychnine act to produce this augmentation in the vital property of the spinal cord? In two distinct ways—1st, in increasing the amount of blood in the spinal cord; 2dly, in acting in a special and direct manner on the tissue of the cord. As regards the first mode of action, we shall only state here that it is a positive fact that the quantity of blood circulating in the spinal cord is very much increased, and that consequently its nutrition is also increased. As regards the second mode of action, the admirable researches of MM. Martin-Magron and Buisson have established beyond doubt, that even when the spinal cord does not contain any blood, strychnine directly applied upon, or in that organ, increases so much of its vital property that reflex tetanic spasms may be produced.

"These two modes of action of strychnine explain how this alkaloid acts in cases of reflex paraplegia. The amount of blood in the spinal cord, and the reflex faculty of this organ, are very much diminished in this affection. Therefore strychnine must have a great curative power in such a malady, and it must be employed with persistence so long as the paraplegia lasts. The teachings of theory in this respect agree perfectly with those of practice, as there are a great many cases observed by others or by myself, which I might relate, to show the therapeutical power of strychnine in the reflex paraplegia.

"When used together with opium, the dose of strychnine must be a small one—*i. e.*, from one-fortieth to one-thirtieth of a grain a day. When used alone, its dose may be one-twentieth of a grain a day. When employed together with belladonna, the dose must be larger on account of the antagonistic action of belladonna on the spinal cord."

The chief mechanical means for improving the nutrition of the cord are the position which has been described,—the application of heat and cold alternately, either by means of two sponges, one soaked in very hot, and the other in very cold water, or by flapping with a towel, one end of which has been dipped in cold, and the other in very hot water,—and the powerful excitation of the skin along the spine by interrupted currents. Applications of croton oil, of mustard poultices, of blisters, &c., to the skin of the thigh or calf of the leg are said to be frequently beneficial in the treatment of paraplegia, but revulsives, issues, &c., applied on or near the spine, are condemned as useless.

Galvanism, shampooing, keeping the paralysed parts warm, and attempts on the part of the patient to recall voluntary motion to these parts, are the chief means recommended for preventing the ill-effects of rest in the paralytic muscles and nerves.

—We have left ourselves little room for any reference to the

treatment of myelitis, of spinal meningitis, and of spinal congestion but we must not omit to notice what is said about the use of belladonna and ergot of rye in these affections.

"Amongst the remedies to be employed internally, the most active," says Dr. Brown-Séquard, "are those which have the power of diminishing the congestion of the spinal cord. The two which seem most powerful in this respect are belladonna and ergot of rye. Experiments upon animals have shown to me, in the most positive manner, that these two remedies are powerful excitants of unstriped muscular fibres, in blood-vessels, in the uterus, in the bowels, in the iris, &c. Both of them dilate the pupil: both are employed with success to produce contractions of the uterus; but each of them has more power in certain parts than the other, so that we find belladonna acting more than ergot on the blood-vessels of the iris (which is the principal cause of the dilatation of the pupil)—on the blood-vessels of the breast which is the principal cause of the cessation of the secretion of milk)—on the muscular fibres of the bowels (which is the mode of its action in cases of strangled hernia)—on the sphincter of the bladder (which is one of the causes of its success against nocturnal incontinence of urine), &c.: while, on the contrary, we find that ergot acts more than belladonna on the muscular fibres of the womb, on the blood-vessels of the spinal cord, &c. We cannot give here the proof the exactitude of these assertions on the mode of action of these two remedies, but we must at least answer an objection which probably will arise in the mind of many persons. It will be asked—How is it that, if two remedies that are able to excite contractions in smooth muscular fibres, one produces them more in one place, and the other more in another place? The answer to this objection is indeed very simple. The excitability of smooth fibres, as well as that of striated muscles, varies exceedingly in different parts of the body. An exciting agent, whether galvanism, cold, heat, or belladonna and ergot of rye, will produce powerful contraction in some places, and hardly any in other places. The smooth fibres of the uterus contract more than those of the bowels or bladder, and less than those of certain blood-vessels when stimulated by galvanism: the smooth fibres of certain blood-vessels contract more than those of the uterus under the excitation of cold; still more, the blood-vessels of the cerebral mass and of the face, which contract so much when their nerve (the cervical sympathetic) is irritated, contract but very little when excited by belladonna and ergot, while these two excitants produce powerful contractions in the blood-vessels of the spinal cord.

"Not only have I seen the diminution in the calibre of blood-vessels of the pia mater of the spinal cord taking place in dogs after they had taken large doses of belladonna or ergot of rye, but I have also ascertained that the reflex power of the spinal cord, most likely as a consequence of the contraction of blood-vessels, becomes very much diminished under the influence of these two remedies, which in so doing act just in the opposite way to that of strychnine.

"Led by the knowledge of the above facts, we have employed belladonna and ergot of rye in cases of paraplegia due to a simple congestion or a chronic inflammation of the spinal cord and its meninges,

and we have obtained a greater success than we had dared to hope for. Whatever be the value of our experiments on animals as regards the mode of action of these remedies, it is now certain that they have really a great power in diminishing the amount of blood in the spinal cord and its membranes. It is very well known that many French physicians, especially Bretonneau, Payan, Barbier, and Trousseau, have for many years employed with success belladonna and ergot of rye in cases of paraplegia. Of course we do not claim to have been the first to make use of these remedies in paraplegia, any more than we claim priority as regards employing strychnine in various forms of paralysis. But we claim to have pointed out, as clearly as we could, in what cases of paraplegia strychnine or belladonna and ergot of rye are to be employed or avoided. To indicate this distinction is the principal object of these lectures.

"In the beginning of the treatment of chronic myelitis, we usually employ ergot of rye alone internally, and belladonna externally in a plaster applied to the spine, over the painful spot. The dose of ergot, when the powder is used, which is almost always the case, is at first two or three grains twice a day; gradually the dose is increased until it reaches five or six grains twice a day; and in a few cases we have given eight grains twice a day. We do not think it is necessary to make use of the very large doses employed by M. Payan. The belladonna plaster applied to the spine must be a very large one, four inches wide, and six or seven inches long. If there is no amelioration in a few weeks, we give the extract of belladonna internally in doses of a quarter of a grain twice a day.

"When we find that the patients, after six or eight weeks of treatment by ergot of rye and belladonna, do not get better, we give iodide of potassium in doses of five or six grains twice a day, in addition to the preceding remedies. When there is any reason to suspect that there is a degree of meningitis together with myelitis, we begin at once the treatment by the iodide of potassium with the ergot and belladonna."

A proper position in bed—on the side, perhaps on the abdomen, never on the back, the arms and legs kept warm by flannel bandages and other means, and allowed to hang lower than the trunk,—dry cupping to the spine,—hot douches followed by frictions—are recommended as likely to be of service; but strong revulsives to the spine are put out of court (except, perhaps, in cases of myelitis resulting from caries), from the danger there is of their giving rise to troublesome sloughing.

Where the paraplegia is due to white softening, iodide of potassium is regarded as the remedy most deserving of confidence.

—Such appear to be some of the principal points of interest in these admirable lectures. For want of space, however, we have been obliged to omit many points which are necessary to give a fair idea of the lectures as a connected whole, and we therefore recommend all who have the opportunity to supply what we have been obliged to omit, by reading the lectures for themselves from beginning to end.

On Asthma; its Pathology and Treatment. By HENRY HYDE SALTER, M.D., F.R.S. (London, Churchill, 1860.)

Dr. Salter prefaces his work by a preliminary inquiry into the tenability of the different theories at present held concerning asthma. Having completed this inquiry, and having furnished us with an interesting summary of our theoretical knowledge of the disease, he sets forth the pathological propositions which he proposes to develope in the body of the book, to wit:

"1. That asthma is essentially, and with perhaps the exception of a single class of cases, exclusively, a nervous disease: that the nervous system is the seat of the essential pathological condition.

"2. That the phenomena of asthma—the distressing sensation and the demand for extraordinary respiratory efforts—immediately depend upon a spastic contraction of the fibre-cells of organic or unstriped muscle, which minute anatomy has demonstrated to exist in the bronchial tubes.

"3. That these phenomena are those of excito-motory or reflex action.

"4. That the extent to which the nervous system is involved differs very much in different cases, being in some cases restricted to the nervous system of the air-passages themselves.

"5. That in a large number of cases the pneumogastric nerve, both in its gastric and pulmonary portions, is the seat of the disease.

"6. That there is a large class of cases in which the nervous circuit between the source of irritation and the seat of the resulting muscular phenomena involves other portions of the nervous system besides the pneumogastric.

"7. That there are other cases in which the source of irritation, giving rise to the asthmatic paroxysm, appears to be central—in the brain; consequently, in which the action, though excito-motory, is not reflex.

"8. That there is yet a class of cases in which the exciting cause of the paroxysms appears to be essentially humoral."

These propositions are dealt with *seriatim*. Of the first, the outline of Dr. Salter's argument is as follows: (*a*) The *causes* of asthma are such as affect the nervous system, and such as give rise to other diseases acknowledged on all hands to be nervous. (*b*) The *remedies*, *e.g.*, antispasmodics, sedatives, direct nervous depressants, such as stramonium, antimony, chloroform—are such as appeal to the nervous system. (*c*) The *periodicity* which characterises asthma, "implies its nervous nature." The periodicity observed in disease, Dr. Salter remarks, is of three kinds; first, that which is produced by the periodical return of its cause; as, for example, the recurrence of hay-fever in summer, or of indigestion every day at a certain time after dinner; secondly, the periodicity depending apparently "upon that rhythmical impress which is stamped on the functions, that sort of diurnal oscillation in which the body is swung by the constant recurrence, at one unvarying daily interval, of the habitual actions and

passions of the body;" thirdly, the periodicity which "has no relation either to the diurnal interval or to the renewal of the cause, but which must be intrinsically periodic; such as epilepsy and asthma. This last kind of periodicity, and this alone, it is, that points at all to the nervous nature of a disease." (*d*) The associated and precursory symptoms of an asthmatic attack, also point to its nervous character; (*e*) the possible absence of organic change after death, leads to a like conclusion; and, (*f*) finally, "the phenomena of the disease are muscular, the proximate diseased condition is situated in the muscular system, and whenever the proximate derangement is muscular, we may always, with one or two exceptions, safely affirm that the primary disease is nervous;" witness epilepsy, tetanus, chorea, paralysis agitans, &c., "in all the obvious departure from health is in the muscular system; but the essence of the disease is nervous."

Of the second proposition Dr. Salter remarks, in the first place, that it is one which many perhaps might think it hardly worth while to set about proving. He, however, thinks otherwise, and with justice, and in the process of proof may be gathered one or two illustrations exceedingly well calculated to convey a just idea of the clear and effective manner with which Dr. Salter treats his subject. The dyspnœa of severe, uncomplicated asthma, is very peculiar, differing entirely from that produced from heart-disease, emphysema, or bronchitis. The dyspnœa of asthma, indeed, tells us not only what it is not, but what it is.

"It gives the most positive evidence of narrowing of the air-passages. The asthmatic's breathing is what our forefathers called 'strait,' what we call 'tight;' he feels as if a weight were on his sternum, as if his chest were compressed, as if a cord bound him, as if it would be the greatest relief to him if some one would cut his breast open and allow it to expand; he rushes to the window to get air, he cannot tolerate people or curtains about him, his clothes are loosened, and all the muscles of respiration tug and strain their utmost to fill his chest. But he can neither get air in nor out, he can neither inspire nor expire—his respiration is almost at a dead-lock; he cannot blow his nose, can hardly cough or sneeze, cannot smoke a pipe, and if his fire is failing, cannot blow it up; he has hardly air enough to produce the laryngeal vibrations of speech. The chest is distended, indeed, to its greatest possible limit, the cavity of the thorax is enlarged both in the costal and diaphragmatic directions; the costal distension is shown by the fact that the clothes that ordinarily fit will not meet over the chest by from one to two inches, while the descent of the diaphragm is shown by the increased girth of the abdomen and by the heart being drawn down to the scrobiculus, where it is seen beating plainly; such are the violent instinctive efforts of the respiratory muscles to overcome the obstruction to the access of air. But they are unavailing; the air that is without cannot get in, and that which is within is locked up. In spite of the violent muscular effort there is hardly any respiratory movement, the parietes of the chest cannot follow the action of the muscles; on listening to the chest the respiratory murmur is inaudible, even when not drowned by the wheezing; respiration is almost *nil*. Where, then, can this obstruction

to the introduction and exit of air be? It must be in some of the air-passages—the larynx, trachea, or bronchial tubes. In the larynx and trachea we know, from the symptoms, it is not. The fact of bronchial structure, then, is certain.

"The very meaning of the dyspnœa, too, its agonizing and laborious character, implies that the seat of the mischief is in the air-passages. Dyspnœa is essentially remedial, and tends directly, both by its sensory and muscular phenomena, to diminish and relieve its cause. As soon as respiration is not going on satisfactorily, the sense of dyspnœa, or want of breath, at once prompts to more violent respiratory efforts, which tend to relieve it. The distressful sensation is an essential link in the chain—it gives warning of the condition to be remedied, and is the irresistible stimulus to the remedial efforts. But this sense of dyspnœa, being in its nature remedial, would be likely to be felt only in those cases in which the condition giving rise to it could be remedied by those extraordinary respiratory efforts to which it irresistibly prompts. Now, consistently with this view, I think I have noticed a very curious law with regard to dyspnœa—it is this, that it is proportionate not to the amount of injury done to the organ, but to the amount of relief that the condition admits of by extraordinary respiratory efforts. If the parenchyma of the lung, its functioning structure, is injured, no amount of respiratory effort will better the condition, and accordingly violent dyspnœa is not induced. Thus, half the lung may be destroyed by phthisis or solidified by pneumonia, and the tranquility of the respiration be hardly interfered with: a little hurried, perhaps, but with no distress or violent effort. But if, while the lung-substance is healthy, the free access of air is prevented, violent and distressing dyspnœa is immediately induced—as in croup, laryngitis, the sudden infarction of a large bronchus. For here, if the air could only be got in sufficient quantity to the healthy functioning structure, the balance of the function would be completely restored; hence it is that such cases are always characterised by those violent respiratory efforts which have for their object the freer introduction of air, and that urgent sense of want of breath which is the constituted stimulus to these efforts. We recognise, therefore, in the very urgency of asthmatic dyspnœa evidence that the mischief is in the air-passages, and that it is of such a nature as to shut off the air-supply.

"But the *sounds* of asthma give us perhaps still more certain and circumstantial evidence as to the condition of the bronchial tubes. We know in health that respiration is noiseless, but that when the breathing becomes asthmatic it is accompanied with a shrill sibilant whistle. We know, too, that hollow tubes give no musical sound, when air rushes through them, if they are of even calibre, but if they are narrowed at certain points, if their calibre is varied, the air in them is thrown into vibrations, and they become musical instruments. The wheezing of asthma, then, is as positive evidence of bronchial contraction as if we could see the points of stricture—it is physical demonstration."

Dr. Salter then proceeds to show that the bronchial tubes may be narrowed in four ways; first, by a plug of tenacious mucus, partly closing the passage; secondly, by congestive or inflammatory thicken-

ing of the mucous membrane; thirdly, by plastic exudation thrown out in the sub-mucous areolar tissue in severe bronchitis, and undergoing slow contraction; and, fourthly, by contraction of the circularly-disposed organic muscle which exists in the bronchial wall, spasmodic stricture, to wit.

"In all these ways the column of air in a bronchial tube may be constricted, and the tube converted into a musical instrument—the seat of a sound that will be sonorous or sibilant rhonchus, of high or low pitch, according as the tube is large or small. Now, which is the cause of the sound in the case before us—the sibilus of asthma? The sibilus depending on a plug of tenacious mucus sticking to the side of the tube is generally (always *ultimately*) relieved by coughing; the sibilus of asthma is never affected by coughing. Inflammatory tumidity of the mucous membrane can never be dissociated from the symptoms of existing bronchitis, and the sibilus arising from it is not of transient appearance and disappearance; the sibilus of asthma, however, may come one minute, and the next be gone, and is ever changing; moreover, the signs of bronchitis are absent. The sibilus arising from the contraction of plastic exudation thrown around the tube is unvarying and irremediable—a permanent condition, and must have been preceded by some recognised attack of severe bronchitis; the wheeze of asthma, on the other hand, ceases with the paroxysm, and there need not have been bronchitis in any part of the previous history of the case. We have thus got rid of three of the possible causes of sibilus—we have seen that in the case before us (asthmatic wheezing) it cannot be produced by mucous plugging. by vascular tumidity of the mucous membrane, or by the slow contraction of old plastic exudation thrown around the tube. Muscular spasm alone remains. And should we have in this a condition consistent with all the phenomena, and sufficient for their production? Perfectly. The supposition of spasmodic stricture of the air-tubes would explain the sudden access and departure of the dyspnœa, for it is a state that may be instantaneously induced, and may instantaneously vanish; it is consistent with perfect health in all other respects, with the absence of all organic disease or vascular disturbance in the lungs (except that which results from it), with the kind and characters of the sounds generated, with the particular type of the dyspnœa, with the effects of remedies, and with all those circumstances that point to the nervous nature of the disease, such as its causes, the effect of emotion, its periodicity, &c.; for only by the production of muscular contraction of their walls can nervous stimuli affect the condition of the bronchial tubes; everything, therefore, that points to the nervous nature of the disease, points to spasmodic bronchial stricture as its proximate pathological condition.

"Thus we see, by evidence as certain as sight, that in asthma bronchial spasm must and does exist, and that no other conceivable supposition will explain the phenomena. And we see this independently of that anatomical and physiological support that dissection and experiment supply, and that has hitherto been the chief evidence adduced."

On the remaining propositions our space will not permit us to dwell;

it must suffice to state that they are worked out with clearness and precision.

Dr. Salter next enters upon the clinical history of asthma. This is exhaustive, and as much may be said of his subsequent discussion of the varieties, etiology, and consequences of the affection.

The varieties of asthma, Dr. Salter arranges according to the following scheme:

- ASTHMA.
 - Idiopathic, uncomplicated, or *Spasmodic* Asthma.
 - 1. Exciting cause manifest.
 - *Intrinsic* Asthma, *i. e.*, irritant applied to the lungs themselves.
 - I. *Asthma from fog, smoke, fumes of various kinds.*
 - II. *Ipecacuan asthma.*
 - III. *Hay asthma.*
 - IV. *Asthma from animal emanations.*
 - V. *Asthma from certain airs.*
 - VI. *Toxhæmic asthma.*
 - *Excito-motory*, or reflex Asthma.
 - I. *Peptic asthma.*
 - II. *Asthma from organic nervous irritation.*
 - III. *Asthma from peripheral cerebro-spinal irritation.*
 - *Central* Asthma. *Epileptic, Emotional, &c.*
 - 2. No apparent exciting cause of attacks. *Periodic asthma.*
 - Symptomatic, complicated, or *Organic* Asthma.
 - Organic cause *Vascular.*
 - I. *Asthma complicating bronchitis, common humid asthma—senile asthma.*
 - II. *Cardiac asthma.*
 - Organic cause *Nervous. Heberden's Case, &c.*

In respect to causation, Dr. Salter thinks that all cases of asthma may be divided into two groups:

1. Cases in which the essential cause of the disease—that which constitutes the individual an asthmatic — is some organic lesion, possibly not appreciable, either in the bronchial tubes, or in some part physiologically connected with the bronchial tubes.

2. Cases in which any organic lesion is not only inappreciable, but non-existent, in which the tendency to asthma is due to something from within, not from without, in which the essential cause of the disease is a congenital and possibly inherited idiosyncrasy.

The discussion of the treatment and prognosis of asthma, follows, in due order, the examination of the consequences of the disease. Dr. Salter discusses fully the treatment of the paroxysm by depressants, by stimulants, and by sedatives, as well as the treatment by inhalation of the fumes of burning nitre-paper. He also treats of the dietetic and regimenal treatment of the disease, the therapeutical influence of locality, and the hygienic treatment.

The portion of Dr. Salter's work which is devoted to treatment, is

of great practical interest and value. He treats successively of the influence of the different drugs which have been found useful in relieving the asthmatic paroxysm, so far as he has had an opportunity of testing their merits, and it would be necessary to follow him step by step in his remarks, not only on the medicinal, but also on the dietetic and hygienic treatment of the disease, in order to convey a just notion of the practical value of this part of his work. This our space forbids, and this we shall little regret, if, by our silence, we should induce our readers to possess themselves of the book itself; a book which, without doubt, deserves to be ranked among the most valuable of recent contributions to the medical literature of this country.

Dyspnœa as a mechânical cause of Congestion of the Lungs. By Dr. Andrew H. Smith. (American Medical Times, 2d July, 1860).

In this essay, Dr. Andrew H. Smith offers an ingenious and apparently satisfactory explanation of the congestion of the lungs which results from severe or protracted dyspnœa. After referring to the theories of Haller, Goodwin, Bichat, Kay, Wintrich, and C. J. B. Williams, which chiefly attribute the impediment to the presence of venous blood in abnormal situations, he says that the degree of congestion capable of being explained by any of these theories may be estimated by examining the lungs of an animal destroyed by section of the medulla oblongata. In numerous instances in which he has performed this experiment, he has always found that, while some amount of pulmonary congestion was present, it was insignificant in comparison with that produced by occlusion of the trachea; although the chemical condition of the blood must be the same in one case as in the other. He therefore argues that there must be another cause for the production of congestion by dyspnœa—and that this cause is to be found in the increased energy of the respiratory movements.

Dr. Smith observes that, in the mechanism of respiration, there are two avenues of ingress into the lungs—one by the air-passages for the air, the other by the blood-vessels for the blood; and that, in fact, we respire blood in precisely the same way and by the same mechanism as we respire air. The amount of blood drawn into the lungs in an ordinary inspiration is small, owing to the fact that the space acquired within the chest is readily filled out by air admitted through the trachea. But, obstruct the entrance of air, and at the same time increase the force of the inspiratory effort, and the amount of blood entering the lungs may be greatly increased. The atmospheric pressure upon the vessels within the thorax is rendered less than that upon the vessels of the body generally, and a rush of blood from every direction towards the tharacic cavity is the result. Hence in every case of dyspnœa depending upon obstruction of the air-passges, there must be a congested state of the lungs at the termination of every inspiratory effort. That the congestion which has thus been produced during inspiration is not relieved during expiration, is due to the following circumstances: —1. The amount of blood to be expelled is increased; 2. The interval between the inspirations is diminished, so that less time is allowed for

its expulsion; 3. The tonicity of the vessels is impaired by their over-distension, so that the expelling force is hereby diminished.

The following experiment has been performed by Dr. Smith to show the difference between the degree of congestion resulting from non-aëration of the blood, and that produced by the additional effect of increased energy of the respiratory movements. A ligature was placed around the trachea of an animal, and drawn so tightly as to prevent completely the entrance of air into the lungs. At the same instant that the ligature was tightened, the thorax was freely opened on one side, so that the air passed without obstruction in and out of the pleural cavity. By this means the influence of the respiratory movements upon the lung of that side was entirely suspended, while with respect to the other lung, it remained comparatively unimpaired. On examining the lungs after death, the one on the side which was opened was found to be but slightly congested, while the other was gorged with blood. The chemical condition of the blood must have been the same in both lungs, since both were equally excluded from the atmosphere. The effect of any change taking place in the action of the heart, or in the pulmonary vessels, must also have been the same in one lung as in the other.

Dr. Smith infers from the preceding reasonings, that in every case in which the respiratory movements are increased to any considerable extent in force or frequency (the entrance of air being obstructed), there must be a proportionate degree of congestion of the lungs as a necessary mechanical result.

The operation of this principle is well illustrated in a case of bronchitis. At the outset of the disease, the bronchial mucous membrane is congested, its vessels turgid with blood. This condition implies a thickening of the membrane and a diminution of the calibre of the tubes, and hence an obstruction to the entrance of air into the lungs. At the same time, the accompanying febrile movement quickens the circulation, and produces an increased demand upon the lungs. The respiratory movements become more frequent and forcible; and the expansion of the thorax not being responded to by a prompt and sufficient influx of air into the lungs, a compensating increase in the amount of blood flowing in is the consequence. The pulmonary vessels, already overloaded, receive a new supply; and their tonicity, already impaired by the effect of the disease, is still further diminished by this increased distension. With every increase of congestion, there follows an increase of obstruction, and therefore of dyspnœa, which, in its turn, gives rise to a further increase of congestion. And so the process continues, the congestion aggravating the dyspnœa, and the dyspnœa aggravating the congestion, until finally the tension within the vessels arrives at such a point that a serous effusion takes place into the bronchial tubes, mingling itself with the products of inflammation. By this means the tension is relieved, and the actual stasis which would otherwise result is avoided. But if, as is often the case, the feebleness of the patient renders a sufficient expectoration impossible, or if the bronchial tubes, labouring under the disadvantage of having lost their ciliated epithelium, and of having their circular muscular fibres paralysed, cannot relieve themselves of the accumulating

mass, then suffocation is inevitable, unless the process can be arrested by the intervention of art.

From the above considerations, and from the results of numerous experiments on animals and of a few upon the human subject, Dr. Smith has been led to believe that, in cases in which the cause of the obstruction cannot be directly attacked, the most direct and certain means of relieving the dyspnœa is by affording to the lungs an atmosphere which shall contain, in the volume which finds access to the air-cells, a quantity of oxygen equal to that respired in health. By this means the demand for oxygen is supplied, without the necessity for those violent muscular efforts which aggravate the cause of the dyspnœa, while at the same time they exhaust the strength of the patient.

The Composition of the Urine, in health and disease, and under the action of remedies. By Dr. EDMUND A. PARKES, Fellow of the Royal College of Physicians, Professor of Hygiene in the Army Medical School, &c. (London, Churchill, pp. 400, 1860.)

"I have attempted," says Dr. Parkes in the preface to this work, "to give an abstract (necessarily extremely condensed, but I hope accurate) of the very numerous observations on the 'Urine of Man,' which have been made of late years. It seemed to be very desirable to compress, if possible, into some narrow compass, the records of researches of great interest, but yet so elaborate in their detail, and so scattered in different publications, as to be almost inaccessible to men engaged in active professional work. To anything like a full account, I cannot lay claim, but I hope I have succeeded in presenting a readable book for those who wish merely to know the latest observations on this subject, and in furnishing to those engaged in similar original inquiries some assistance in the way of reference. I have given the references carefully, not from display or pedantry, but because I am quite convinced that, in the present state of this difficult inquiry, every statement should be easily traced to its author, so as, if necessary, to be properly verified.

"The title of the book expresses its exact nature; it is a mere enumeration of the alterations in the urinary constituents under various circumstances. I have not entered into the chemical history of these constituents, nor into the mode of determining their amounts. Works in chemistry deal better with the first subject, and the technical treatises of Neubauer and Thudichum have, for the time, exhausted the second.

"Nor have I given illustrations of urinary sediments; for the treatises of Golding Bird, George Johnson, Hassall, Beale, Basham, and others, are in the hands of all; and so many beautiful plates have been lately published by Funke, Verdeil, Beale, Hassall, Basham, and Thudichum, that to insert plates in the present book is really unnecessary."

The present volume is intended only as the first of a series. It is to be followed, we hope speedily, by another in which will be enume-

rated the alterations in the excretions from the skin, lungs, and intestines; and perhaps by a third, wherein the nature of the tissue-changes leading to these alterations will be considered. At the same time, there are not wanting in the present volume frequent notices of these variations in the excretions of the lungs, skin, and bowels, without which the changes in the urine merely lose half their interest.

The work itself is divided into two books. In the first book, the urine in health is considered, in the second the urine in disease; and each book is preceded by an introduction, in which, in the one case the normal constituents of healthy urine, and in the other the abnormal constituents of unhealthy urine are considered. The plan is to pass in review all the possible physiological and pathological conditions *seriatim*, and under each head to discuss each urinary ingredient.

A work having this scope, and by an author whose abilities for the task have been so well proved on former occasions, is indeed a welcome addition to medical literature. All will agree upon this point; all will agree that not a few changes in opinion are necessitated by the facts which have been accumulating during the last few years, and, thus agreeing, they will be glad to have the facts so arranged and digested as to give them an opportunity of readily knowing what these changes are; and all will, we think, be satisfied by the manner in which the work has been done. At the same time, we must confess a feeling of disappointment, for notwithstanding the great amount of work, good work, which has been done, it is evident that we are at the beginning rather than at the end of our labours, and that we may have to wait some time before we can draw safe conclusions upon many points of no small interest.

—It would be easy to select many passages showing that the facts necessitate change in notions commonly received by medical men. We might show, for example, how very little many highly trusted diuretics are entitled to confidence; but we open to what is said respecting the action upon the urine of the various liquids ordinarily taken as food. Having narrated the facts (we wish they were more numerous) Dr. Parkes proceeds—

"The various liquids ordinarily taken as food* are thus divisible into two great classes, those which favour, and those which more or less retard, urinary excretion. To the first class belong water and the lighter wines; to the second, alcohol, strong wines (probably), strong beer, tea, and coffee. The retardation of excretion produced by the second class is, however, not shown merely by the urine, but in several cases also by the pulmonary, the cutaneous, or the intestinal excretions. It can, therefore, scarcely be doubted that the action of these substances is not merely that of retaining certain excretions in the body, but that of absolutely lessening their formation. They appear, in fact, to retard metamorphosis, though in different degrees and in different directions; some acting remarkably on the urine, but less on the intestines, as coffee; others influencing the urine very little, but the bowels more, as tea. These substances differ also in

* "I have not alluded to milk or whey, as I am unacquainted with any trustworthy experiments on the urine."

their mode of action, even on the urine: thus tea appears to slightly lessen the uric and the phosphoric acids, while it scarcely affects the urea; while coffee not only affects the chloride of sodium, but lowers remarkably the urea, the uric acid, and (probably) the phosphoric acid. No doubt also other differences will be made out, and each substance will be found to have its specific action.

"Although the effect on the urine of these substances is thus tolerably well known in systems which are carefully arranged for the experiment, it remains to be seen how far in actual life their effects are counteracted by custom, habits, or peculiarities of race and climate. It is impossible to suppose that every drinker of spirits has always such a small secretion as occurs in the temperate man, who suddenly (for the sake of the experiment) introduces a large quantity of alcohol into his body. The effect of the alcohol may be counteracted by other conditions, such as the use also of large quantities of water, of great exercise, or like agencies, which augment metamorphosis.

"The exact steps of the process by which this retardation of metamorphosis is brought about are not yet known; we see only the results. Is it from simple appropriation of oxygen, or from some more complex action of nutrition directly, or through the medium of the nerves? Is the process of the building of the tissues equally delayed with that of their unbuilding? In many cases, the use of these agents in large quantities lessens the desire for food, and the body maintains its weight on less nutriment than would have been the case with water or light wines.

"How far this result is a good one—how far the normal rapidity of metamorphosis (such as occurs with moderate water-drinking) can be advantageously checked by the use of such substances—is a social problem of the highest importance. It seems to me, that the obvious deduction from our present physiological knowledge is, that the more rapid the healthy metamorphosis of the body, within certain limits, the more urea and pigment are formed, the more perfect is nutrition, *as long as nutriment is supplied in sufficient amount*, and as long as the formative powers can use it. In the immense excretion of children, and in the retarded metamorphosis of old age, we see the two ends of the scale, and have the proof that growth and progress are corollaries of rapid metamorphosis and elimination. Have we then a right to conclude, that anything which impedes healthy metamorphosis is hurtful, and that, in checking disintegration, it will equally check formation? Perhaps, without going at present quite to this length, we may believe that the most perfect condition of health is rapid building and rapid unbuilding; and all the most strengthening hygienic means, as exercise, sea air, saline baths, and abundant nutritious animal food, act by forwarding both these processes. Appetite increases, but at the same time the action of the eliminating organs is also increased; the body gains weight, although there must be increased rapidity of the molecular currents and of chemical changes.

"The training for the ring may be taken as an illustration of my meaning. The prize-fighter eats largely of animal food; he thus, if Bischoff's and Voit's experiments be received, increases both the formation and the disintegration of tissue; and it is to be presumed,

that the excretion of urea during training must be increased. The prize-fighter brings into play another factor of elimination, for he gradually increases his muscular movements to an enormous extent; and, by so doing, he must absorb much more oxygen than usual, and give out more carbonic acid. (Seguin, Hoffman, Vierordt, E. Smith.)

"All the three great factors of metamorphosis, viz., nitrogenous food, oxygen, and movements, are thus increased; and the amount of metamorphosis must also go on augmenting, up to a certain point, as the bulk of the tissues increases.

"So far the prize-fighter may be said to follow the dictates of common sense; but now how does he act with regard to alcohol, and wine, and the substances usually supposed to give strength, and to limit the necessity for food? Why he almosts discards their use; he takes no spirits, no wine, only a little weak beer (which he might with advantage leave off); but drinks to any amount of pure water, or fluids equivalent to it; and thus taught by experience, he employs another most potent agent in elimination.

"Under this regime, his health improves wonderfully; he can bear any fatigue, morbific causes are comparatively inoperative, injuries are more easily recovered from, and, for the time, he is the very type of health and vigour. That the class is not a healthy one, is owing to the reckless living between the periods of training.*

"If, then, nitrogenous food is abundant, the use of substances to check metamorphosis, within physiological limits, seems unphilosophical. If the food be insufficient, then the use of these substances may become desirable. Yet, as Liebig says, the use of alcohol, coffee, tea, and such substances, is so universal as to look like an instinct; and some decided benefit must be at the bottom of a custom so general. The explanation usually given, that these substances are taken, because, by lessening metamorphosis, they lessen the desire for food, and maintain the body at the same weight with less nutriment, may account for some but not for all cases; and it is most probable that their immediate sensible effect on the nervous system is that which is wished for by those who take them, and that, as already said, any part of their action which might be injurious is commonly counteracted by other habits which are almost as instinctively adopted as is the use of these substances themselves.† Yet I must candidly say, with regard to the stronger alcoholic liquids, that what study I have been able to give to this subject, and to the causation and treatment of disease generally, has led me more and more to adopt the view of Carpenter and others, and to believe that the use of alcohol in health is not only unnecessary, but is absolutely injurious. The effect of light wine, beer, tea, and coffee, in impeding metamorphosis, is, however, so inconsiderable, and their irritating effects on

"* These remarks were written long before the late prize-fight so strongly directed the public attention to the effects of training. In the 'Lancet,' and other journals, most sensible remarks have been made on this point; and if the attention of the profession is directed to the true sources of strength of body (which will not be found in the use of alcohol), this celebrated contest will have done much good."

"† I may refer to an interesting article on tea, coffee, &c., by Dr. King Chambers, in the B. and F. Med.-Chir. Rev.,' 1854."

tissues are so slight, that there seems nothing to urge against their moderate use.

"Whatever may be the difficulties, at present, of discussing this most important dietetic subject in the case of healthy persons, there can be no doubt that what is known of the action of these substances assists us very much in using them in disease. The nervous system is stimulated, and metamorphosis lessened, by coffee, and slightly by tea; and in exhausting diseases these effects are most useful.

"I presume that, while sugar, starch, &c., are available, it can seldom be necessary to employ alcohol as a factor of heat; this object can be obtained by more easy and more certain methods. The physician, as I take it, uses alcohol for two great purposes—as a direct stimulus to the weakened stomach, and as a stimulant of the nervous system, and, through it, of the failing heart.* Now, in our choice of alcoholic fluids, we must be guided, it appears to me, by the consideration of how far it is wished, at the same time, to check or to increase elimination. For example, in the last stages of fever, when the body has wasted almost to extremity, and when, as the controlling power of the nervous system is lost, too great disintegration may still go on, even in the emaciated tissues, pure alcohol, which stimulates the heart's action, and yet impedes metamorphosis, must be employed; while, in other cases, in which, while the nervous system and the heart must be stimulated, it is desired not to check excretion (as during the absorption of exudations), the lighter wines, or the combination of spirit with alkaline salts, should be chosen. In the vast class of chronic complaints dependent on lesions of nutrition, obstinate congestions, and continued parenchymatous inflammation, and in which, as a rule, digestion is weak and tissue change is lessened, the same rules hold good; and, by a judicious combination of means, we may obtain from these substances the effects we desire from them, and can counteract and nullify the influences which should be avoided."

—All who know the value of Dr. Parkes' original researches upon the action of potass and acetate of potass upon the urine, upon the changes of the urine in fever, pneumonia, Bright's disease, &c, will, we doubt not, be eager to consult the book for themselves. They will have no doubt that the subject under consideration will be thoroughly exhausted. For the few who have yet to make the author's acquaintance, we will simply say that all the promises of the title are fully and conscientiously performed.

"* This opinion is not that of the late Dr. Todd, who emphatically recommended alcohol as a food. But its local irritating effects on the liver and nervous tissues seem to me to render it as undesirable a food as can well be named, unless those irritating properties are expressly desired; while the evidence of its destruction in the system is, as already said, very incomplete. We know only that, if destroyed, it is so only partially, and with difficulty. Its rank as a heat-giving food cannot be high, if indeed it be a food at all."

A Practical Treatise on Diseases of the Urinary and Generative Organs (in both sexes); illustrated with woodcuts and coloured plates. By WILLIAM ACTON. (Third edition, 8vo, London, Churchill, 1860.

The previous edition of Mr. Acton's work was published in 1851. In the present edition he has entirely re-cast his materials, added largely to them, and brought the whole fully up to the requirements of the present time. Of the more important additions to the work we may mention—a discussion of the question whether there is more than one virus capable of producing specific disease; remarks on the real significance of induration; additional tables of the mortality from syphilis, &c.; as well as the latest views on the subject of rape. The majority of the illustrations are also new.

— As to the rest, all that we have to do is to announce the appearance of a new edition, for the work itself is well known as a standard English work upon the subject of which it treats.

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